UNIVERSITÄT OSNABRÜCK

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Algorithms of Affection: Exploring the Impact of AI on 21st Century Romance

PICS 2025, Number 2

PICS
Publications of the
Institute of Cognitive Science

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Niklas Bub. 2025. *Algorithms of Affection: Exploring the Impact of AI on 21st Century Romance* (Publications of the Institute of Cognitive Science 2025, Number 2). Osnabrück: Institute of Cognitive Science, Osnabrück University.

This title can be downloaded at:
https://osnadocs.ub.uni-osnabrueck.de

https://doi.org/10.48693/644

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Storage and cataloging done by Osnabrück University

Algorithms of Affection

Exploring the Impact of AI on 21st Century Romance

Master thesis

in Cognitive Science

submitted by

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on 24.08.2024

at Universität Osnabrück

Table of contents

Abstract 2

Introduction 3

1. Modern Romance 4

1.1. A short history of modern romance 4

The rise of hedonism 5

Female emancipation 7

The advent of neoliberalism 9

1.2. The challenges of modern romance 12

Uncertainty 12

Choice overload 15

Sexual capital 17

Rejection 19

Loneliness 22

2. Algorithms of Affection 25

2.1. AI matchmaking 26

The evolution of matchmaking 27

Swipe right 28

The engagement trap 30

Connection lost 32

The future of matchmaking 34

2.2. AI companions 38

Conversational AI 38

Romantic chatbots 40

The dangers of romantic AI 43

2.3. The cost of commodification 45

Market solutions 45

Surveillance capitalism 47

The loss of Eros 49

Everything's not lost 50

Conclusion 52

Declaration of Authorship 55

References 56

Abstract

Over the past two centuries, romantic relationships in Western societies have undergone profound changes, largely due to the weakening of traditional social structures and the rise of individual autonomy. This thesis explores the implications of these changes, with a particular focus on the influence of artificial intelligence (AI) in shaping modern romance. As traditional frameworks such as family and religious norms have dissolved, a competitive dating marketplace has emerged, characterized by individualism, the pursuit of emotional fulfillment, and the commodification of sexuality. As a result, modern romance is increasingly characterized by inherent contradictions, including the tension between the pursuit of stability and the need for autonomy, the struggle to find emotional fulfillment in a landscape of uncertainty, and the overwhelming challenge of navigating a marketplace saturated with commodified choices. In this context, AI-driven matchmaking and AI companions play a dual role in facilitating and complicating romantic relationships. While these new AI tools offer innovative solutions for enhancing compatibility and providing emotional support, they also risk further commodifying intimacy, potentially eroding genuine emotional connections and deepening dependency on market forces. The findings underscore the need to critically examine the impact of AI on romantic relationships and call for robust regulatory frameworks to govern these new algorithms of affection.

Introduction

Online platforms are now the dominant way couples meet in the United States. In 2017, 39% of heterosexual couples met each other online, while all other meeting venues were on the decline (Rosenfeld et al., 2019). This trend has likely accelerated in recent years, especially due to the coronavirus pandemic. By 2022, internet dating generated $2.86 billion in revenue worldwide, with market growth showing no signs of slowing down (Statista, 2023). In less than two decades, a few tech companies have monetized one of our most natural human interactions. Instead of meeting people in our communities, bars, or workplaces, we increasingly rely on matchmaking AI that knows our preferences and interests better and better.

Further, the idea of having a romantic relationship with an AI is no longer inconceivable. Although once frowned upon, the 2013 film 'Her', among others, brought the concept of romance between a human and an AI into mainstream culture, grossing nearly $50 million worldwide (The Numbers, 2024). Nowadays, the allure of romantic AI chatbots captivates tens of millions of users worldwide (Caltrider et al., 2024; Hadero, 2024; Mozilla Foundation, 2024). In the United States, 31% of men and 15% of women are open to having sex with a robot (H. E. Fisher & Garcia, 2023, p. 790). But especially in Japan, the concept of human-artificial relationships is gaining traction. By 2021, around 4,000 Japanese men had 'married' their digital companions (Caldwell, 2021).

The evolution of human relationships facilitated by technology has reshaped not only how we find love but also how we think about relationships. This shift not only broadens our horizons but also challenges traditional paradigms, leading us to question the very nature of connection and intimacy. To grasp the appeal of matchmaking and romantic AI in contemporary society, it is essential to trace the transformations that modernity has introduced to the realm of romance. Over the past 200 years, the Western individual has severed ties with traditional structures such as religion, kinship, and social expectations. But the age of liberalization has brought its own challenges. As Erich Fromm (1941) insightfully observed: "Freedom, though it has brought [man] independence and rationality, has made him isolated and, thereby, anxious and powerless."

In the first chapter of this thesis, I will explore the challenges to modern romance that have emerged from the liberalization of love, sex, and the market. This exploration will consider how the erosion of traditional social structures has led to a more individualized yet often more insecure experience of love. In the second chapter, I will explore how modern AI technologies intersect with these challenges, both mitigating and exacerbating them. I will analyze how AI tools, while offering new avenues for connection and intimacy, also reinforce the insecurities that characterize modern romantic experiences. Through this exploration, I aim to shed light on the complex dynamics between technology, love, and the evolving nature of human relationships in the digital age.

1. Modern romance

Freedom, though it has brought [man] independence and rationality, has made him isolated and, thereby, anxious and powerless.

Erich Fromm (1941)

1.1 A short history of modern romance

Dating in the West hasn't always been about swiping through potential partners on your smartphone, going out to dinner that night, and waking up in your date's bed the next morning – maybe all in less than 24 hours. In pre-modern times, dating was essentially governed by the rules of courtship. Entrenched in religious patriarchy, gender inequalities, and the association of sex with sinfulness, intimate encounters followed a strict social order that had little to do with falling in love, which was often viewed as a form of mental illness or a sign of bedevilment (Röttger-Rössler, 2006, p. 73). As philosopher Alain de Botton (2017) puts it:

> "The Romantic faith must always have existed, but only in the past few centuries has it been judged anything more than an illness; only recently has the search for a soulmate been allowed to take on the status of something close to the purpose of life. An idealism previously directed at gods and spirits has been rerouted towards human subjects" (Botton, 2017, p. 6).

The sociologist Eva Illouz (2012, 2021) – who has spent the last 30 years researching love and emotions and whose work is a major inspiration for this thesis – identifies these then-strict social scripts around love and sexuality as the basis for social certainty. According to Illouz, "Courtship was a social framework for the organized, ritualized circulation of feelings according to rules of expression, reciprocation, and exchange usually known to the two parties involved. The outcome was a clear yes or no, but quite often the simple fact of starting a courtship signaled that each was interested in matrimony and induced young people to move toward that goal" (Illouz, 2021, pp. 72–73).

A risky and far-reaching decision – 'Do I want to marry them?' – was framed by cultural norms, rituals, and a clear set of rules to guide the actors in their decision-making process. Although there was no certainty about the outcome, there was certainty about the goal and about the way how to get there.[1] Consider a young woman in Elizabethan England (1558-1603). She usually met potential suitors only under the watchful eye of a chaperone, and these suitors had to seek her father's approval before courting her. Their communication often consisted of exchanging letters and verses designed to show their suitability for marriage rather than to express personal or physical affection. Their interactions, always supervised and during formal visits, were designed to secure social alliances and economic benefits between families rather than to foster romantic love. This process of ritualized courtship, which could last months or years, closely followed (un-)written social rules and usually resulted in marriages

[1] According to the sociologist Niklas Luhmann (1995), the reduction of complexity and uncertainty are fundamental components of social processes. Romance, as a form of "symbolic communication" (Luhmann (1986, pp. 147–148)) is one of these social processes, connected to expectations, predictions, and motivations.

that were strategically advantageous. After all, the primary reason for marriage was to ensure a male heir to whom family property and titles could be transferred (O'Hara, 2000).

The 'Sturm und Drang' era (1765-1785) marked an uproar against these strict societal norms, captured in Johann Wolfgang von Goethe's 'The Sorrows of Young Werther' (1974). Goethe's novel depicts the intense, unrestrained emotions of Werther, whose unrequited love for Charlotte leads him into a downward spiral of despair, ultimately resulting in his tragic suicide. Unlike the structured and strategic courtship practices of earlier eras, Werther's love is intense, passionate, and irrational, driven more by emotion than by social conventions or economic considerations.

The Sorrows of Young Werther critiques the emotional repression and rigid social expectations of its time, emphasizing the devastating effects of pursuing love in a world that does not accommodate such passions. It reflects the growing tension between individual desires and societal norms, a theme that would continue to resonate in 19th-century literature: novels such as Gustave Flaubert's 'Madame Bovary' (1857), Leo Tolstoy's 'Anna Karenina' (1878/88) and Theodor Fontane's 'Effi Briest' (1894/95) explore the tumultuous social landscape of their time and offer a critique of the rigid structures that governed personal relationships. The protagonists of these stories often face tragic consequences as they seek to pursue romantic love outside the accepted social order, highlighting the struggle between individual desires and societal norms. In Madame Bovary, for instance, Emma Bovary's quest for passionate love results in financial ruin and personal tragedy, illustrating the destructive potential of pursuing romance in a constrained social framework. Similarly, Anna Karenina's passionate affair with Count Vronsky leads to her social ostracization and eventual demise, reflecting the harsh repercussions of defying societal expectations. In Effi Briest, the young Effi's marriage to a much older man and her subsequent affair exemplifies the constraints placed on women and the dire consequences of stepping outside those boundaries.

> "For most of recorded history, people married for logical sorts of reasons: because her parcel of land adjoined his, his family had a flourishing grain business, her father was the magistrate in town, there was a castle to keep up, or both sets of parents subscribed to the same interpretation of a holy text. And from such reasonable marriages, there flowed loneliness, rape, infidelity, beating, hardness of heart and screams heard through the nursery doors" (Botton, 2017, p. 36).

The rise of hedonism

The early 20th century witnessed a significant shift in societal attitudes towards sexuality and individual freedom. The consequences of the Industrial Revolution and subsequent urbanization significantly altered social structures, as people moved from rural areas to cities. This urban migration created new opportunities for men and women to meet more freely, laying the groundwork for modern dating practices. During this time, authors such as Marcel Proust, F. Scott Fitzgerald, and Henry Miller depicted the evolving norms and the rise of the hedonist single man who prioritized personal pleasure over traditional marital commitments (Illouz, 2021, p. 109).

In Marcel Proust's seminal work, 'In Search of Lost Time' (1913-1927), the character of Charles Swann exemplifies this new social type. Set in the high society of late 19th and

early 20th century France, Swann's numerous romantic escapades and his obsessive love affair with Odette de Crécy highlight a growing acceptance of sexual exploration and emotional complexity. Swann's relationships, driven by desire rather than societal expectations, reflect the loosening constraints surrounding sexuality in this era. F. Scott Fitzgerald's 'The Great Gatsby' (1925) further illustrates these changes through the character of the U.S. American Jay Gatsby. The novel portrays the roaring twenties as a time of excess and liberation, where the pursuit of pleasure often took precedence over conventional morality. Gatsby's lavish parties and numerous romantic entanglements with women, especially his intense and unyielding love for Daisy Buchanan, symbolize the era's growing hedonism and the pursuit of personal satisfaction. Similarly, Henry Miller's 'Tropic of Cancer' (1934) breaks ground with its explicit content and unabashed exploration of sexual freedom. The protagonist, based loosely on Miller himself, leads a bohemian lifestyle in Paris, engaging in numerous sexual relationships without the intention of settling down. This raw and candid depiction of sexuality challenged the prevailing norms and censorship of the time, illustrating a radical shift towards viewing sex as a natural and integral part of the human experience.

These literary works not only depict the emergence of the hedonist single man but also already critique the era's burgeoning consumerism and the disillusionment with traditional values. By focusing on characters who prioritize their desires and pleasure, these novels underscore the transformative period of the early 20th century, where societal norms were increasingly questioned and redefined. One of the first researchers to study this new entity was the sociologist Émile Durkheim in his book 'Le Suicide' (1897):

> "Though his [the married man's] enjoyment is restricted, it is assured and this certainty forms his mental foundation. The lot of the unmarried man is different. As he has the right to form attachment wherever inclination leads him, he aspires to everything and is satisfied with nothing [...] The uncertainty of the future plus his own indeterminateness therefore condemn him [the unmarried man] to constant change. The result of it all is a state of disturbance, agitation and discontent which inevitably increases the possibilities of suicide." (Durkheim, 1897, pp. 304–305).

With the rise of science and Freudian psychoanalysis, sexuality was increasingly seen as a natural desire rather than a sinful endeavor; an act of recreation, not just reproduction (Illouz, 2021, p. 91). The resulting decline of rigid religious and social frameworks not only created new freedoms but also new instabilities for individuals who could no longer cling to cosmological certainties for a sense of purpose and belonging. Family alliances and status considerations, once central to romantic relationships, increasingly gave way to individual choice and individual satisfaction.

The contrasting tendencies of freedom and oppression, feminism and patriarchy, chaos and order characterized the twenties in many major Western cities such as Paris, Berlin, and New York. The philosopher Jean-François Lyotard in his book 'The Postmodern Condition' (1999) describes these difficulties posed by the dissolution of grand religious and ideological narratives, leaving individuals without authoritative rationality and self-evident certainties that clearly distinguish right from wrong. Throughout the 20th century, these themes of personal freedom and individual identity continued to evolve, greatly influenced by major economic changes.

Female emancipation

The aftermath of World War II significantly accelerated societal changes in the West. During the war, women took on roles traditionally held by men, working in factories and serving in auxiliary military positions. Previously confined largely to roles within the home, women began to assert their independence and economic power by taking on paid employment (Esteban Ortiz-Ospina et al., 2024). A poignant illustration of these changes can be seen in the novel 'A Tree Grows in Brooklyn' (1943) by Betty Smith. The protagonist, Francie Nolan, grows up in a working-class family in the early 20th century. Her mother, Katie Nolan, represents the shift as she takes on multiple jobs to support her family, showcasing the increasing presence and significance of women in the workforce. Katie's determination to ensure her children receive an education reflects the growing emphasis on women's autonomy and the importance of personal development beyond traditional domestic roles.

The foundation for these changes was laid in the late 19th century, with the introduction of the right to privacy, which aimed to protect private life, including sexuality, from the intrusion of the state, church, and community (Dabhoiwala, 2010). The 20th century saw further reforms, such as improved access to higher education for women and legal changes including the criminalization of marital rape and the recognition of rights for unmarried couples. These reforms empowered individuals, particularly women, to make choices that had previously been restricted (Esteban Ortiz-Ospina & Max Roser, 2020). As a result, women began to assert more control over their personal lives, challenging traditional courtship rituals and advocating for greater equality in relationships.

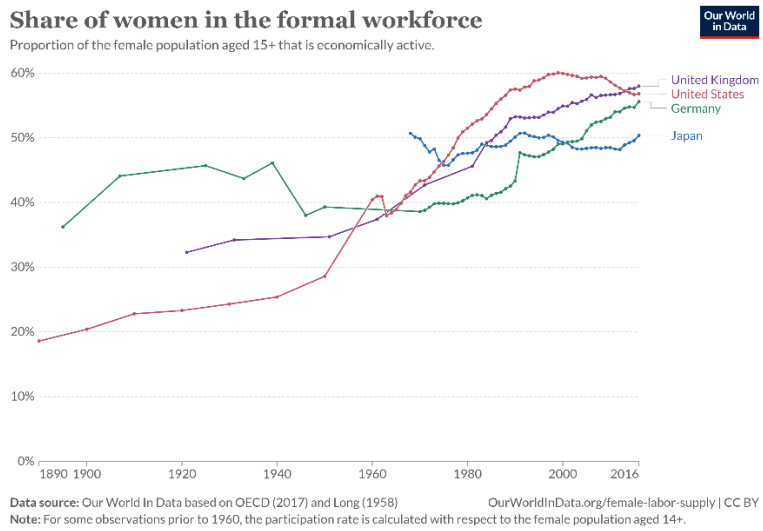

Figure 1: Proportion of working females in the US, UK, Japan and Germany (Esteban Ortiz-Ospina et al., 2024).

The youth culture of the 1950s and 1960s, epitomized by figures like Elvis Presley and the Beatles, further challenged traditional values and norms, embracing new forms of expression and lifestyle. This era saw the advent of rock'n'roll, the civil rights movement, and a growing rebellion against the established order. For women, this period marked a departure from the strict confines of domesticity, as they began to assert their presence in public life more forcefully. The sexual revolution of the 1960s further transformed societal attitudes towards sex and relationships. It broke down many taboos surrounding premarital sex and contraception, leading to a more open and liberal attitude towards sexuality. The introduction of the birth control pill in 1960 was a watershed moment, granting women unprecedented control over their

reproductive lives. In this context, Betty Friedan's landmark book, 'The Feminine Mystique' (1963), highlighted the dissatisfaction of many housewives and ignited widespread public discourse on women's roles in society. The subsequent feminist movement led to significant legal and social changes in the US, such as the passage of the Equal Pay Act of 1963 and Title IX in 1972, which prohibited gender discrimination in federally funded education programs.

By the second half of the 20th century, these transformations had taken deep root, leading to a more liberated and equal society. Women increasingly pursued careers, education, and personal fulfillment on their terms. The 1980s saw the rise of the 'superwoman' ideal, where women were expected to excel both at home and in their careers. This balancing act of managing work and family life became a central theme for many women, as depicted in popular media, such as the film '9 to 5' (1980), which portrayed the challenges and triumphs of working women striving for equality and recognition in the workplace. Overall, the post-World War II era was a period of significant transformation, where societal norms were challenged, and the roles of women in the West were redefined, paving the way for greater gender equality and personal autonomy.

The newfound independence of women from men, society, and religion is also reflected in the marriage and divorce patterns of the 20th century. Since the second half of the 20th century, marriage rates in Western societies have declined steadily. Esteban Ortiz-Ospina and Max Roser (2020) find that marriage rates in the United States have fallen by nearly 50% since 1972, while the number of single-parent households has nearly doubled since 1960[2]. Divorce rates skyrocketed in the 1970s-2000s, but have since declined again. Economists Stevenson and Wolfers (2007) suggest that these trends reflect an adaption to the newfound financial independence of women and the sexual freedom of both sexes. Due to the decline of religious and traditional norms, and the liberalization of sexuality and love, marriage – in the 20th century – became less of a necessity or societal expectation and more of a personal choice made in accordance with individual life goals and values.

These changing role adjustments, where women increasingly gained the opportunity to divorce their husbands without having to face financial ruin or societal stigma are reflected in the high divorce rates from the 1970s to the early 2000s (Stevenson & Wolfers, 2007). Marriages formed under earlier social norms struggled to adapt to this changing social landscape. Marriages formed during these changes already had different expectations and social conditions from both partners entering the marriage, where marriage was increasingly becoming about emotional stability rather than financial stability. The falling divorce rate is partly due to this adaptation to new social conditions and partly to the fact that fewer people are getting married. As a result, only those who want to marry do so, and often much later in life than in the past. Instead, there are much longer periods of premarital acquaintance, cohabitation, and premarital sex, which is now almost as normal as kissing before marriage (H. E. Fisher & Garcia, 2023, pp. 791–792). As Whyte (2017, pp. 22–24) shows, premarital sex among U.S. American women rose from 24% in the 1925-1944 cohort to 72% in the 1965-1984 cohort, and to 94% in the cohort up to 2002 (Finer, 2007). However, these societal shifts were not merely cultural but deeply intertwined with economic changes.

[2] Single-household parents in the United States have increased from 5.2% in 1960 to 9.3% in 2010.

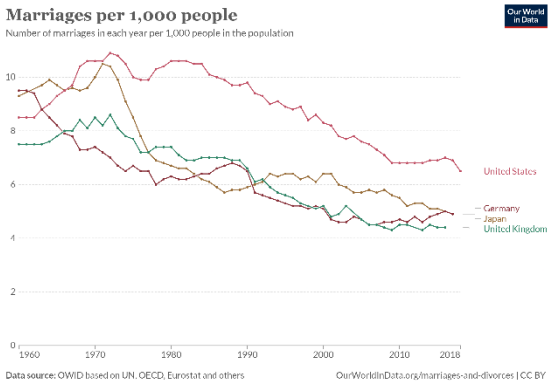
Marriages per 1,000 people
Number of marriages in each year per 1,000 people in the population
Our World in Data
United States
Germany
Japan
United Kingdom
Data source: OWID based on UN, OECD, Eurostat and others
OurWorldInData.org/marriages-and-divorces | CC BY

Figure 2: Marriage rates fell in the US, UK, Japan and Germany from 1960 to 2018 (Esteban Ortiz-Ospina & Max Roser, 2020).

Figure 3: Divorce rates rose in the US, UK, Japan and Germany between 1960 and 2000, then fell again (Esteban Ortiz-Ospina & Max Roser, 2020).

The advent of neoliberalism

The impact of World War II had already begun integrating women into the workforce, as they filled roles left vacant by men who had gone to fight and didn't return after the war. However, the economic downturn and recession of the 1970s pushed even more women into the workforce out of economic necessity, as families increasingly needed two incomes to make ends meet (Yarborough, 2022). Housing costs in the US tripled in the 1970s and 1980s, making home ownership unattainable for most families without dual earners (Martin, 2017).

In response to the economic crises of the late 1970s and early 1980s, neoliberal[3] ideas emerged all across the Western world, promoting free markets and competition as solutions to stimulate economic growth. The push for deregulation and privatization often resulted in cuts to social services, placing more responsibility on individuals and families to secure their economic well-being. As a result, women's participation in the workforce became not only a matter of personal ambition but also a necessity for economic survival. This shift away from Keynesian ideas of regulated capitalism and the welfare state meant that individuals had to navigate an increasingly competitive and less secure economic environment.

Whereas classical liberal ideas placed the individual at the center and proposed free markets – rather than aristocratic and religious hierarchies – as a means of achieving mutual benefit, neoliberalism kept the focus on the individual but discarded the idea of mutual benefit in favor of competition, transforming people into 'human capital'

[3] Neoliberalism is a political and economic philosophy that promotes free markets, deregulation, privatization, and reduced government spending. Emerging in the late 20th century, it emphasizes the belief that economic growth is best achieved with minimal state intervention. While influential in shaping global policies, neoliberalism is often criticized for increasing inequality and eroding social safety nets.

(Metcalf, 2017), where everything and everyone was becoming a commodity (M. Fisher, 2009).[4]

The rise of gig economy platforms like Uber and Airbnb in the 2010s exemplifies the impact of neoliberalism on the workforce. These platforms promoted flexibility and entrepreneurship but also resulted in unstable income and a lack of benefits for workers. People turned to gig economy platforms with the promise of flexible hours that could accommodate childcare and other responsibilities. However, the competitive nature of these platforms and the absence of traditional employment protections meant that many workers nowadays face financial insecurity and constant pressure to perform, illustrating the broader shift towards the commodification of labor under neoliberal policies.

This ideological shift paved the way for what the Korean-born German philosopher Byung-Chul Han (2017, 2021) calls the 'achievement-society' of the late 20th century, in which individuals begin to see themselves as projects to be optimized, with implications for their life and their romantic relationships (Han, 2017). Drawing on the work of sociologist Michael Foucault, Han contrasts today's 'achievement-subject' with the 'obedience subject' of earlier disciplinary societies (White, 2023), as the modern individual, akin to the Hegelian slave, "does not work for the master, but rather exploits himself of his own volition" (Han, 2017, pos. 403). These changes extend from the economic sphere into personal and romantic relationships, transforming them into realms governed by market-oriented strategies. Philosopher Jan Slaby (2016), describes this dynamic as a form of 'mind invasion' (cf. Walter & Stephan, 2023) where neoliberal ideology permeates all aspects of life, including the most intimate.

An illustrative example can be found in Brett Easton Ellis' novel 'American Psycho' (1991). The protagonist, Patrick Bateman, epitomizes the achievement-subject in a hyper-capitalist society. Bateman is a successful investment banker who meticulously curates every aspect of his life, from his physical appearance to his social interactions, as a series of projects to be optimized. His relationships, both personal and romantic, are characterized by a cold, calculated approach that mirrors market-oriented strategies. Bateman's actions are driven not by external coercion but by an internalized need to maintain his status and success in a competitive society.

As traditional social structures declined, market values increasingly supplanted social values. Philosopher Michael Sandel (2010) highlights this shift by examining CEO salaries. In 2010, the average CEO earned 344 times more than a lower-level worker, a dramatic rise from the 39 to 1 ratio in 1980 (Bivens & Kandra, 2023). While some argue that high salaries simply reflect supply and demand due to the scarcity of qualified individuals for these roles, from a social value perspective, it is questionable whether CEOs in 2010 are genuinely eight times more valuable than those in 1980. These changing value systems are also evident in the realm of sexuality.

[4] The philosopher Martin Heidegger already noted the early symptoms of this shift in 1954, stating that "agriculture is now the mechanized food industry. Air is now set upon to yield oxygen, the earth to yield uranium … Even the Rhine itself appears to be something at our command … the revealing that rules throughout modern technology has the character of setting upon" (Heidegger, 1954/1996, pp. 15–16). This mechanistic view extended beyond nature to human relationships, as Erich Fromm observed, discussing the "spirit of quantification, abstraction and depersonalization that is so characteristic of our time" (Fromm, 1976/2013, pp. 22–23), transforming relationships into possessions (Fromm, 1976/2013, p. 39).

Sexual freedom initially served as a political stance, championed by figures like Simone de Beauvoir and Jean-Paul Sartre in the first half of the 20th century. Their polyamorous relationship defied rigid sexual norms, symbolizing independence and rebellion, and served as a role model in the sexual revolution of the 1960s. However, with the rise of cinema, TV, and advertising, the portrayal of sexuality shifted from a political act to a market-driven one (Illouz, 2021, p. 93). This commodification is exemplified by sexually explicit media in the late 20th century. Shows like 'Baywatch' in the 1990s and movies like 'Basic Instinct' (1992) utilized provocative imagery to attract audiences, while advertising campaigns such as Calvin Klein's 1992 ad featuring Mark Wahlberg and Kate Moss in provocative poses revolutionized the fashion industry by using sexually explicit imagery to market underwear. These cultural phenomena drove the commodification of sexuality, demonstrating how the sexually attractive body could be leveraged to sell products and capture public attention, thereby setting new standards for sexual attractiveness and influencing societal norms (Goren, 2003; McNair, 2002). As sexuality was increasingly seen as a marketable commodity, one's sexuality became a personal asset to be developed, marketed, and maximized for personal gain in a sexual market dominated by competition, contract negotiations, and cost-benefit analysis (Ludwig, 2016).

The trend of viewing sexuality and sexual relationships as strategic investments is evident in the popularity of reality dating shows like 'The Bachelor' (2013-present) and 'Love Island' (2017-present). These shows transform love and romance into competitive spectacles, where contestants are judged on their sexual appeal. Participants often undergo significant physical transformations and personal branding efforts to boost their attractiveness. The normalization of cosmetic enhancements reinforces this perspective. Procedures such as lip enhancement, body sculpting, and Botox injections are marketed as investments in one's sexual market value. This glorification of the body is further evidenced by the steady increase in gym memberships, which – in Germany – have surged from 4.4 million in 2003 to 11.3 million in 2023 (Statista, 2024). Advertisements and social media influencers promote this competition as an essential step to achieving greater desirability and, consequently, success in romantic pursuits.

> "Sexual bodies are shaped to generate value and therefore demand a constant management, self-branding, and attempts to establish and maintain their worth because they are in a state of permanent competition with other bodies" (Illouz, 2021, p. 257).

In summary, traditional forms of courtship that once guided romantic relationships are increasingly being replaced by market-driven competition in the dating market. The freedom movements of the modern era, from the Enlightenment to the feminist movement, have provided individuals with a scope and legal framework that their early 19th-century ancestors could scarcely have imagined. The principles of equality before the law, protection from discrimination and authority, and the right to live one's life freely are invaluable assets. However, the societal changes over the past two centuries, despite their tremendous advancements in freedom, have also introduced new challenges for individuals, particularly in the realm of romance.

1.2 The challenges of modern romance

Today, we navigate a realm of contradictions in romance. On one hand, romantic partnerships are idealized in literature, film, and television, elevating them to near-sacred status. On the other hand, the traditional foundations that once supported these relationships have largely dissolved. We simultaneously seek personal self-fulfillment and crave the comfort of stable bonds. We are skeptical about lifelong fidelity yet continue to search for 'the one'. In this context, novelist Daniel Schreiber (2022, pp. 14–15) notes that the erosion of patriarchal norms, fixed gender identities, and a shared sense of collective responsibility has led individuals to navigate a fragmented reality in search of new certainties. With the decline of grand narratives such as religion, kinship, and political ideologies, the pursuit of love has become the predominant narrative for achieving happiness in Western societies. However, the romantic disappointments stemming from these modern contradictions increasingly leave us disillusioned and seeking alternatives.

Consensual non-monogamy, for instance, challenges the conventional exclusivity of romantic partnerships, offering a framework where individuals can engage in multiple romantic relationships with the consent of all parties involved. About a third of U.S. American singles report having been in a consensual non-monogamous relationship, and various U.S. states are changing laws to protect people in such relationships from discrimination, reflecting significant cultural and legal recognition of these dynamics (Mallenbaum & Montgomery, 2024). Similarly, the concept of sologamy – where individuals marry themselves – champions self-love and personal fulfillment independent of a partner. This practice challenges traditional societal expectations of marriage and promotes a narrative of self-sufficiency and individual happiness (Lytton, 2017). This theme of personal empowerment is celebrated in pop culture, exemplified by songs like Miley Cyrus' 'Flowers' (2023)[5]. As traditional relationship structures begin to disintegrate, the once clear certainty offered by age-old rituals has been replaced by an era dominated by personal choice and market values, bringing with it a new level of freedom, but also uncertainty.

Uncertainty

At the heart of Western neoliberal romantic relationships is a profound paradox, captured by psychotherapist Leslie Bell in her 2013 book 'Hard to get: Twenty-something women and the paradox of sexual freedom'. Bell observes that many young women who come to her are "more confused than ever about not only how to get what they want, but what they want" (Bell, 2013). This confusion, says Bell (2013), stems from a barrage of conflicting social messages and expectations. On the one hand, today's young women are experiencing unprecedented sexual freedom and autonomy,

[5] The chorus of the song goes as follows:
„I can buy myself flowers
Write my name in the sand
Talk to myself for hours
Say things you don't understand
I can take myself dancing
And I can hold my own hand
Yeah, I can love me better than you can"

surpassing that of previous generations. On the other hand, they are still caught up in residual societal pressures, traditional gender roles, and conflicting narratives about female sexuality and empowerment.

As traditional societal norms and cosmologies lose their influence, individuals now face both the freedom and the burden of finding their own paths to a fulfilling life. Decisions are increasingly based on one's emotional state, but without overarching narratives to guide us, these emotional foundations are becoming less stable. In the absence of traditional norms, many young people are turning to media sources such as self-help books, TV series, and social media influencers for guidance. These influencers, known for their wide reach and perceived authenticity, have become key figures in shaping contemporary perceptions of success and fulfillment (Nymoen & Schmitt, 2021). Their growing appeal to young audiences highlights the broader absence of stable, overarching narratives that previous generations relied upon for guidance.

This transition marks a move from traditional, stable guidance systems to a landscape where guidance is fragmented and often inconsistent, mirroring the uncertainty that now characterizes contemporary romance. As the dynamics within families and marriages evolve, so does the structure of these relationships. Marriage, once primarily a strategic alliance, has shifted to a model that emphasizes emotional satisfaction and personal fulfillment as central to its sustainability. This has led to a scenario in which partners are more likely to enter and exit relationships based on their emotional states, guided less by social necessities and more by individual desires. In this context, sociologist Eva Illouz points out: "One of the most distinctive marks of twentieth-century modernity has been the transformation of the family through divorce whose possibility became a permanent potentiality of modern marriage" (Illouz, 2021, p. 364).

The shift towards individualism and emotional fulfillment within marriage introduces a layer of uncertainty and instability which complicates the traditional understanding of marital commitment and love, Illouz further explains: "Precisely because it became more emotional, marriage also became more uncertain, that is, less based on ascriptive clear gender roles distributed along the private/public distinction and more based on the individual expression of emotions" (Illouz, 2021, p. 371). However, these emotions are shaped in a world where relationships are increasingly seen as projects of self-improvement. Partners are now not only participants in a mutual bond but also performers, both sexually and emotionally, under the constant threat that there could always be someone else "who would love me more, understand me better, make me feel more sexually alive" (Phillips, 1996, p. 69).

Beyond doubt, the ability to leave an abusive marriage without facing social stigma or economic hardship represents a significant advance in our liberal society. This is particularly important for women who, historically, may have felt compelled to stay in such marriages due to a lack of economic independence, often resulting from a lifetime devoted to homemaking and child-rearing rather than pursuing a career. However, this newfound freedom also means that the inherent security and certainty once typical of marriages have diminished. In a society that values autonomy and places great emphasis on the emotional basis of relationships, while at the same time promoting the idea of maintaining one's sexual market value, it is increasingly common to

consider ending a relationship that one *no longer feels*[6]. Why continue to invest in a partnership that has become more burdensome than beneficial, especially when there are no social consequences and so many alternatives?

In today's Western culture, where casual sex is widely accepted, the traditional reasons for staying in a committed relationship are therefore being reevaluated. As individuals enjoy greater freedom to make choices about their relationships based on personal satisfaction and well-being, they are increasingly opting for arrangements that require less commitment and offer more flexibility, such as casual sex or friends-with-benefits arrangements. These arrangements not only preserve personal autonomy but also protect individuals from the pain of break-ups, which, unlike in the past, have become commonplace. From a young age, contemporary adults experience frequent romantic break-ups, which can lead to severe physical and emotional distress, including anxiety, depression, loneliness, and, in extreme cases, suicide (Davis et al., 2003, p. 871). According to Moore (2015), 64% of U.S. Americans have experienced the break-up of a long-term relationship. As a result, many are reluctant to fully commit and often preemptively end relationships to avoid potential heartache and the disruption of one's self-concept (Slotter et al., 2010).

In a cultural climate where the end of a relationship is often expected, maintaining independence and safeguarding one's self-identity becomes essential. Thus, to reduce one's vulnerability and to increase self-worth, modern individuals increasingly engage in what Eva Illouz calls 'negative choice', such as "the one-night stand, the zipless fuck, the hookup, the fling, the fuck buddy, the friends with benefits, casual sex, casual dating, cybersex [...] with no or little involvement of the self, often devoid of emotions, containing a form of autotelic hedonism, with the sexual act as its main and only goal." (Illouz, 2021, p. 39). Illouz argues that while positive choice was a defining factor of early modernity – with the cultivation of new relationship arrangements based on freedom of choice, such as "the love marriage, the disinterested friendship, the compassionate relationship to the stranger, and national solidarity" (Illouz, 2021, p. 39) – negative choice is characterized by "the rejection, avoidance, or withdrawal from commitments, entanglements, and relationships in the name of freedom and self-realization" (Illouz, 2021, p. 37).

To be clear: The acceptance of casual sex for all genders represents significant progress (though it's important to note that modern women still face stigma for promiscuity – more on this in the later section on 'Rejection'). First, it means that after centuries of unpredictability, women have finally gained some control over their contraception. Whereas sex used to be associated with the risk of (unwanted) motherhood – which not only meant social exclusion for the mother but was also a common cause of death in childbirth –, sex can now be enjoyed for its own sake. Moreover, in its historical emergence, casual sex was an expression of individual freedom that defied religious taboos and thus the patriarchal structure of marriage, in which a woman's sexual pleasure was secondary (Godbeer, 2004). At the same time, however, casual sex in its

[6] In her graphic novel 'Ich fühl's nicht' ('I don't feel it'), novelist Liv Strömquist (2020) critically examines the complexities of love and emotional fulfillment in the context of contemporary society. The title encapsulates the central dilemma of the narrative: the struggle to genuinely experience and sustain feelings of love in an era dominated by consumerism, autonomy, and a pervasive culture of disposability. Strömquist explores why, despite greater connectivity and access to potential partners, many find it challenging to achieve lasting emotional fulfillment.

current form has become a symbol of the autonomous sexual actor who doesn't have to commit to a choice, make themself vulnerable, or engage in a reciprocal relationship.

Paradoxically, despite this unprecedented freedom in sexual relationships, there has been a noticeable decline in the frequency of sexual activity. Whereas in the 1990s, American adults had sex around 60 times a year, by the 2010s this frequency had fallen to roughly 50 times a year (Twenge et al., 2017). The trend is even more pronounced in Japan, where the percentage of virgins among singles aged 18 to 34 increased significantly over a decade, i.e., from 33% in 2005 to 43% in 2015 (Julian, 2018). However, these shifts are not isolated to Japan but are evident across all Western countries, with young adults engaging in less sex in early adulthood (Twenge et al., 2017). In this context, relationship researchers such as H. E. Fisher (2017) believe that the decline in sexual behavior is mainly due to the decline in couple relationships. After all, although our sexuality is freer than ever and sex outside of relationships is no longer taboo, most regular sex still takes place in stable relationships. Yet in the United States, almost 60% of adults under 35 now live without a partner (Julian, 2018).

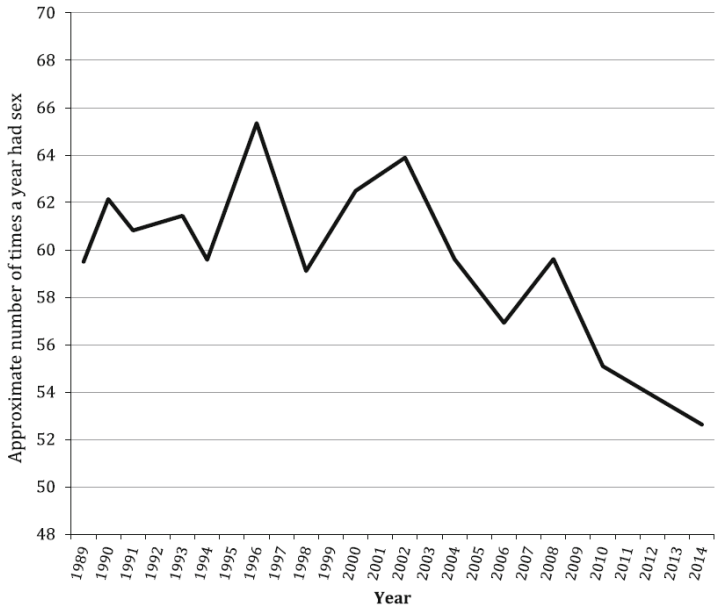

Figure 4: Estimated number of times per year that US adults had sex, 1989-2014 (Twenge et al., 2017).

Choice overload

Today, we enjoy unprecedented freedom in determining where to live, work, and with whom we share our time. It is not only that we can choose freely from possible options, but that there's a seemingly infinite pool of options. Whereas in the past we mainly carried on our family's craft, today we can choose between countless apprenticeships, study programs, and professional careers. Similarly, our once-scarce opportunities to find a partner are now in abundance. Before the era of globalization, increased mobility, and the advent of the internet, the search for 'the one' was largely confined to one's immediate community. This made the quest for a life partner a markedly different journey compared to today's vast landscape of romantic possibilities, facilitated by urban metropolises, the convenience of travel, and the connectivity offered by online platforms. This newfound freedom of choice offers numerous benefits. For instance, it enables individuals who may have previously felt isolated due to their unique

personalities or interests to connect with like-minded people globally. However, this freedom also brings the challenge of choice overload, a psychological phenomenon explored by psychologist Barry Schwartz in his book 'The Paradox of Choice' (2007).

Schwarz (2007, pp. 117–165) posits that being confronted with a multitude of options means that selecting one necessitates the exclusion of all others, diminishing the perceived value of the chosen alternative. Faced with multiple appealing choices, individuals often engage in mental trade-offs, assessing their decision based on what they have to give up, rather than the intrinsic value of their choice. Consequently, even after making an optimal decision, people tend to dwell on the aggregate benefits of the options they passed over, rather than appreciating the worth of their selection. Schwartz references a much-quoted study by Iyengar and Lepper (2000), which demonstrated that participants felt more satisfied when choosing from a smaller selection, as opposed to a vast array of possibilities. To illustrate this paradox, consider shopping for a new pair of jeans. In the past, people chose the best fit from perhaps five available pairs. Now, with countless styles available in stores and online, they might try on a dozen pairs before making a purchase. Although they're likely to end up with a better-fitting pair, the overwhelming choice can leave them dissatisfied and pondering the unexplored possibilities.

As Eva Illouz observes, "greater choice creates apathy because the desire to maximise one's options and anticipation of regret over lost opportunities affect the energy of the will and the capacity to choose" (Illouz, 2012, p. 95). When applied to the romantic domain, the concept of choice overload not only leads to apathy, but also contributes to relationship instability, as research suggests that perceiving a greater number of alternative partners reduces relationship stability (Pronk & Denissen, 2020; Simpson, 1987). As philosopher Alain de Botton (2015, pp. 121–122) puts it: "The possibility of an alternative love story is a reminder that the life we are leading is only one of a myriad of possible lives and it is the impossibility of leading them all that plunges us into sadness. There is a longing for a return to a time without the need for choices, free of the regret at the inevitable loss that all choice (however wonderful) has entailed."

The political scientist Robert Lane (2000), in his book 'The Loss of Happiness in Market Democracies', argues that the free market burdens individuals with an excess of life choices while failing to deliver the most significant sources of happiness, i.e., meaningful relationships. He notes that the rise in autonomy has paralleled a decline in community life quality, asserting that the social connections once readily provided by family, neighborhood, and workplace now demand individual initiative to develop and sustain. The phenomenon of choice overload also aligns with the sentiment that committed relationships are increasingly viewed as substantial investments of resources and time that many young people are hesitant to make. Hamilton and Armstrong (2009) observe this hesitation among young college women who often opt for casual relationships over more committed ones due to the significant time and emotional investment required for the latter. These women, successful and desirable in the sexual marketplace, prioritize their economic and social advancement, treating time as a precious commodity.

Contemporary life is rich with opportunities, yet this freedom has its costs. Influenced by neoliberal ideals, we are encouraged to maximize our productivity, which often results in a relentless pursuit of consumption and continuous self-optimization. This environment of abundant choices and opportunities can make the deep investment

required for a committed relationship seem less appealing, as individuals may prefer to keep their options open, continually searching for better prospects. Furthermore, the general encouragement to expand one's horizon and experiences can make long-term commitments to a single partner seem restrictive, potentially limiting one's ability to explore and achieve personal success. While the initial infatuation in every relationship feels exciting, new, and rewarding, there inevitably comes a point in every relationship when the infatuation wears off and we realize that maintaining love requires increasing effort. As the dopamine levels diminish and normalcy increases, as we begin to really get to know our partner, we need to ask ourselves if we are willing to tolerate the inevitable differences in the relationship and subordinate our pursuit of individualism to a functioning partnership. In a culture that is always looking for the next thrill, the special emotion, and the unique, where it has never been easier to find a new partner, and where breaking up is not socially stigmatized but rather encouraged if your partner is 'dragging you down' – who could blame you for moving on?

Sexual capital

Eva Illouz (2021) contends that in modern society, romantic and sexual success frequently hinges on the strategic cultivation and display of sexual capital. This encompasses not only physical attributes but also the ability to project desirability through behavior, fashion, and social media presence. Sexual capital thus emerges as a vital component in the navigation of romantic and sexual interactions, with individuals continually assessed and valued based on their perceived desirability. The concept of 'sexual capital' integrates Pierre Bourdieu's (2021) framework of economic, social, cultural, and symbolic capital[7] with contemporary views on sexual behavior and attractiveness. The significance of sexual capital, which encompasses factors such as physical appearance, charm, sexual prowess, and romantic resilience, becomes particularly pronounced in a society increasingly driven by market values and the pursuit of happiness, where individual worth and fulfillment are often gauged by romantic success.

To increase sexual success, it's important to invest in one's sexual capital. Unlike in the past, having more sexual partners now increases one's value in the sexual marketplace (although women face the additional challenge of balancing between being labeled a 'prude' or a 'slut'). Casual sex, therefore, is not only an expression of freedom but also an investment in one's sexual capital. This dynamic is vividly depicted in the award-winning TV series 'Euphoria', where the character Kat explains to her classmate Ethan why she won't sleep with him, highlighting how sexual performance and prowess have become status markers, often at the expense of emotional attachment (Levinson, 2019, S1, Ep 6, Min. 27:30):

[7] Pierre Bourdieu identified four primary forms of capital: economic, cultural, social, and symbolic. Economic capital refers to material wealth and financial resources, providing direct access to goods and services. Cultural capital encompasses non-financial social assets such as education, intellect, style of speech, and aesthetic preferences, which can influence social mobility. Social capital involves networks of relationships and connections that offer support and access to resources through mutual acquaintances and group membership. Symbolic capital, derived from the other three forms, encompasses prestige, honor, and recognition, granting individuals or groups accumulated prestige and perceived legitimacy within a social field. These forms of capital interplay to shape an individual's social position, power, and opportunities within society.

Kat: "You do or you don't want to fuck me, Ethan?"
Ethan: "I do want to fuck you."
Kat: "Well, I don't fuck virgins."
Ethan: "Really?"
Kat: "Yeah."
Ethan: "Oh. Why?"
Kat: "Cos they just … get too emotionally attached. Plus, they're too shy. I like to fuck people who know how to fuck."

As sexual performance and prowess become more of a status and identification marker, emotional attachment becomes dangerous to the mental equilibrium of the sexual actor. "Sexual freedom", Illouz (2021, p. 23) writes, "is nowadays a realm of interaction where […] actors dispose of a large abundance of technological resources and cultural scripts and images to guide their behavior, to find pleasure in an interaction, and to define the boundaries of the interaction. Emotions, however, have become the plane of social experience that 'poses a problem,' a realm where confusion, uncertainty, and even chaos reign." Byun-Chul Han takes this consideration one step further, noting that "Today, love is being positivized into sexuality, and, by the same token, subjected to a commandment to perform. Sex means achievement and performance. And sexiness represents capital to be increased. The body—with its display value—has become a commodity. At the same time, the Other[8] is being sexualized into an object for procuring arousal. When otherness is stripped from the Other, one cannot love—one can only consume." (Han, 2017, pos. 264). From Han's perspective, casual sex, friends-with-benefits arrangements, and other non-committed relationships can be seen as expressions of modern narcissism, where the casual partner is treated as a temporary source of status and pleasure, with the option to seek a more suitable match in the future.

To reiterate: The shift toward sexual freedom, where individuals can express their sexual identity without adhering to traditional moral or cosmological constraints, represents a profound liberation. As the taint of sin that has accompanied our sexuality for so long has finally disappeared, homosexuality can be lived freely at last, and casual sex is no longer a sensational affair. It's also important to recognize that the relationship between sexuality and romantic love is complex, and not all sexual interactions are tied to romantic intimacy. For instance, concepts like asexuality and open relationships challenge traditional views that closely link sex with romantic love, demonstrating that sexual expression can be independent of, or coexist with, different forms of emotional bonds. As Alain Botton (2017, p. 67) observes, "The libertine position denies any inherent or logical link between loving someone and needing to be unfailingly sexually loyal to them. It proposes that it can be entirely natural and even healthy for partners in a couple occasionally to have sex with strangers for whom they have little feeling but to whom they nonetheless feel strongly attracted."

However, while the 20th century has broadened the acceptance and exploration of diverse sexual identities and relationships, it has also cultivated a marketplace in which individuals feel pressured to continually enhance and market their sexual capital. The commercialization of sexuality, evident in advertising, media, and personal

[8] The 'Other' is a term used to capture the ways other people are different from us. Han's ideas are influenced by a range of philosophical traditions, including Heidegger's concept of 'Dasein', which emphasizes the importance of being-in-the-world with others, and Levinas's ethics of the 'Other', which focuses on the ethical responsibility to the Other.

interactions, constantly reinforces a market-oriented perspective, transforming intimate aspects of human life into yet another sphere influenced by market dynamics and consumer behavior, resulting in the commodification of one's body and experiences.

In this context, Daniel Schreiber (2022, p. 16) notes that the tendency to view individual autonomy and self-realization as *the* modern virtues can sometimes overshadow the importance of deep relationships that are crucial to a fulfilling life (cf. Lane, 2000; Lippke et al., 2021). Sociologist Richard Sennett's (2006) observation about the transient nature of modern employment provides a compelling analogy: Much like temporary workers who initially relish the flexibility and autonomy of their roles, individuals engaging in non-committed relationships may find that such freedom can eventually lead to a yearning for stability and a deeper, more permanent connection: "They want someone to want them permanently; participating in a social structure comes to matter more than personal mobility" (Sennett, 2006, p. 77).

Thus, although the freedom to engage in casual sexual relationships with multiple partners is a clear indicator of our individual freedom, this very freedom poses a challenge to our emotional stability. Illouz articulates this dilemma, noting that individuals find themselves in a precarious balance, "caught between the capitalist imperative to achieve autonomy and the romantic fantasy of durable and monogamous attachment" (Illouz, 2021, p. 363), on one hand perceiving relationships as a sacred union, on the other celebrating the sexual body as a self-referential entity.

Rejection

In modernity, pleasure, authenticity, and self-affirmation have become the primary motivations for sexual relationships (Illouz, 2021, p. 104). At the same time, high sexual capital is a prerequisite for success in the sexual marketplace. This aspect of modern sexual freedom can be empowering, as the ability to navigate relationships with multiple partners and succeed in a competitive sexual marketplace can enhance an individual's self-worth. The very same mechanisms, however, can also lead to feelings of stress and fatigue, leaving individuals with little energy or desire for sexual activity (Fry, 2023). The pressure to constantly perform can lead to a diminished interest in sex and relationships, as the romantic sphere has become another area of life where performance and enhancing one's sexual capital is expected. Moreover, the constant comparison with other social actors can easily lead to feelings of insecurity if one's sexual market value is perceived not to measure up to prevailing standards.

Some argue that today's sexual market disproportionately disadvantages young men (Mahdawi, 2023). In this context, McClain and Gelles-Watnick (2023) find that 63% of U.S. American men under 30 describe themselves as single while in the same age bracket, 'only' 34% of women report being single[9]. However, it is important to keep in mind that many of these perspectives originate from very conservative circles, warranting a cautious approach to such conclusions.

[9] These are figures for heterosexuals, but the figures for people who identify as LGB are very similar (62% single men under 30 compared to 37% single women).

It is undeniable that the sexual dynamic for (young) men has evolved significantly from the past. Historically, as heirs to property, men were almost guaranteed a wife, as marriage for women meant a union that provided economic security at a time when they could not own property or earn independently. This dynamic was enforced by marriage and family laws that placed women under the dominion of their husbands, requiring them to be sexually available to their spouses. The advancement of women's rights – including the right to divorce, to vote, and to work – has since enabled women to achieve financial independence from their husbands and families, empowering them to exit relationships without jeopardizing their social and economic standing[10].

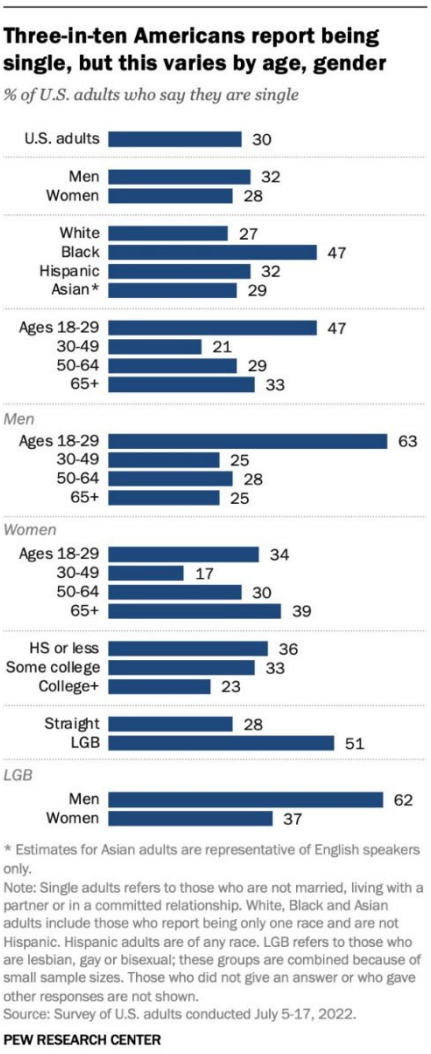
Three-in-ten Americans report being single, but this varies by age, gender
% of U.S. adults who say they are single
U.S. adults 30
Men 32
Women 28
White 27
Black 47
Hispanic 32
Asian* 29
Ages 18-29 47
30-49 21
50-64 29
65+ 33
Men
Ages 18-29 63
30-49 25
50-64 28
65+ 25
Women
Ages 18-29 34
30-49 17
50-64 30
65+ 39
HS or less 36
Some college 33
College+ 23
Straight 28
LGB 51
LGB
Men 62
Women 37
* Estimates for Asian adults are representative of English speakers only.
Note: Single adults refers to those who are not married, living with a partner or in a committed relationship. White, Black and Asian adults include those who report being only one race and are not Hispanic. Hispanic adults are of any race. LGB refers to those who are lesbian, gay or bisexual; these groups are combined because of small sample sizes. Those who did not give an answer or who gave other responses are not shown.
Source: Survey of U.S. adults conducted July 5-17, 2022.
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Figure 5: Comparing the relationship status of U.S. American men and women in different age brackets (McClain & Gelles-Watnick, 2023).

The reactionary solution proposed by extreme conservative factions is a regressive return to patriarchy, ensuring that every man can secure a wife as in the past. This sentiment finds its most extreme expression in the incel (involuntary celibates) community. Originally coined to create an inclusive space for those struggling to form romantic connections, the term has been hijacked by a group of misogynistic men (Chokshi, 2018). As Watzlawek (2023, pp. 43–44) outlines, the incel community's ideology is rooted in a belief that sexual dynamics equate to political power, with women perceived as holding the dominant position. This perspective is driven by a narrative that men have lost power in direct correlation with women's empowerment. Incels view sex as a measure of one's societal standing, equating the inability to have sexual encounters with a loss of power.

Incels idealize a 'golden age' when women were subordinate to men and men's entitlement to sex could not be denied. Feminism and the shift away from patriarchal values are blamed for the suffering of modern men, as women gain more control over their bodies and only 'give access' to men they find attractive. This belief system fuels their misogynistic behavior, aimed at dehumanizing and disempowering women to reassert their perceived rightful place at the bottom of the hierarchy. Marginalized in a society that equates sexual desirability with social status and personal fulfillment, incels advocate for a return to pre-modern sexual norms. This mindset – evident in

[10] However, is important to point out that this freedom is by no means absolute or equal to men's freedom, since pregnancy and declining fertility are still a greater economic challenge for women.

violent incidents like Alek Minassian's attack in Toronto in 2018[11] – underscores a profound societal rift in attitudes toward sexuality and intimacy: While many view contemporary sexual freedom as a realm of opportunity, others see it as a source of exclusion and humiliation (Illouz, 2021, p. 439).

While incel ideology is deeply reactionary and misogynistic, it articulates a sense of disenfranchisement that is echoed by others who feel sidelined in the sexual marketplace. Pierre Bourdieu's concept of 'distinction' (2000) is helpful in understanding this sense of alienation, as applied by Illouz (2021, p. 439): In the realm of sexuality, distinction is not only about affirming individual tastes or social status but also directly affects the self-worth of individuals by categorizing them based on sexuality. This mechanism of sexual distinction, in which value is ascribed on the basis of attractiveness and desirability, results in a culture where rejection and the feeling of being unwanted become pervasive experiences for some, deeply affecting their sense of self and belonging in society.

Contrast these romantic rejections with the equally competitive fields of ballet, science, or music, where rejection is often seen as personal criticism. Ballet dancers, for example, face auditions where their physical aesthetics are judged alongside their skills, mirroring the physical scrutiny prevalent in modern dating. Similarly, students competing for places in elite academic programs stake their intellectual worth on acceptance, paralleling the deep personal doubts triggered by romantic rejection. Musicians also experience rejection as a reflection of their artistic identities, similar to how individuals in dating scenarios feel judged on their overall desirability and self-worth. When the attributes on which one's worth is judged are so closely tied to one's passion and identity, it can severely affect self-esteem, especially if rejection makes personal attributes seem inadequate, leading to feelings of inadequacy and disconnection.

Importantly, the impact of these dynamics is not limited to young men. Illouz (2021, p. 349) contends that young men and women experience different negative outcomes due to their distinct roles in today's sexual markets. While many young men are losing sexual opportunities, young women are more vulnerable to the consequences of sexually liberal relationships. Because despite changing social norms, promiscuous women continue to be stigmatized as 'sluts', while their male counterparts are often celebrated as 'playboys'. Additionally, although women have achieved legal equality, this does not mean that patriarchal structures and habits will disappear overnight. Accordingly, criteria for sexual attractiveness differ significantly between the sexes. For example, Mullainathan (2018) notes that "men are less likely to want to date a woman who is more intelligent or ambitious than they are". In contrast, men's attractiveness is primarily influenced by their social status and resources.

In other words, while women's sexual attractiveness is primarily influenced by their physical characteristics, represented in the visual industry by young, slim, and tall models, men's sexual attractiveness is much more dependent on financial stability and a successful career (H. E. Fisher & Garcia, 2023, p. 785). This gives men the advantage that their sexual attractiveness does not decline as quickly as that of women and tends

[11] Alek Minassian carried out a van attack on a Toronto sidewalk, resulting in 10 deaths and injuring over a dozen people. Minutes before the incident, he posted on Facebook praising Elliot Rodger, a self-described incel who killed six people in California in 2014. Minassian referred to himself as 'Private Minassian' and expressed a desire to communicate with 'Sgt 4chan', indicating his involvement in the dark chat forums of the internet where incels congregate.

to increase over time (Illouz, 2021, p. 231). It also means that men can engage with a wider range of potential partners, including women their own age and much younger women – an insight that may partly explain the strong differences between male and female singles aged 18-29 (Figure 5).

However, the typical 'losers' in today's dating market are not 'just' young men and older women. As novelist Virginie Despentes writes in her polemic 'King Kong Theory' (2018): "I write as an ugly woman, for the ugly ones, for the frigid, for those who are badly fucked, for the unfuckable, all the excluded from the big market of the hot chick, I write as well for the men who do not want to be protectors, those who would like to be but do not know how to do it, those who are not ambitious, competitive or well hung." In short, the typical 'losers' of today's dating market are all those who are not up to the competition or simply don't want to submit to it.

While experiences of rejection are certainly not new, they have taken on a new gravity in a culture that values attractiveness and desirability, and where one's sexuality is so closely linked to one's sense of self and belonging in society. Ultimately, those affected by this constant rejection are denied the opportunity to participate in the last great narrative of our time: love. As people increasingly measure their self-worth through the lens of sexual market dynamics, those who are continually rejected may experience a deeper sense of social alienation. The pursuit of partnership, if consistently thwarted, can thus lead to extreme outcomes, as evidenced by the tragic case of Alex Minassian in Toronto. For the vast majority of people, however, this constant rejection means one thing above all: loneliness.

Loneliness

Today, more people live alone than ever before. Since 1960, the number of single-person households in Germany and the US has more than doubled[12] (Esteban Ortiz-Ospina & Max Roser, 2024). Historical records show that the trend towards living alone began more than a century ago in the early industrialized countries. In the German Reich, for example, the share of single-person households rose from 5.6% in 1871 to 9.8% in 1939 (Esteban Ortiz-Ospina & Max Roser, 2024).

Of course, living alone and feeling lonely are distinct phenomena (Svendsen, 2017, p. 22). Living alone often hinges on having the financial means to afford an apartment. Conversely, people can still experience loneliness even when they live with others. However, the doubling of single-person households over the past 60 years is a reflection of our increased mobility, growing individualism, and the evolving nature of interpersonal relationships, all of which contribute to a pervasive sense of loneliness for many. In the US, an estimated 42.6 million citizens over the age of 45 suffer from chronic loneliness (Anderson, 2010). The Harvard Grant Study, which started in 1938 and tracks the health of hundreds of Harvard graduates and their children, clearly shows the importance of close relationships for a good life. People without strong social connections tend to get sick more often and live shorter lives than those with a supportive social circle (Vaillant, 2012, esp. 27-53).

[12] In Germany from 20% to 42%, in the US from 13% to 28% (1960-2018).

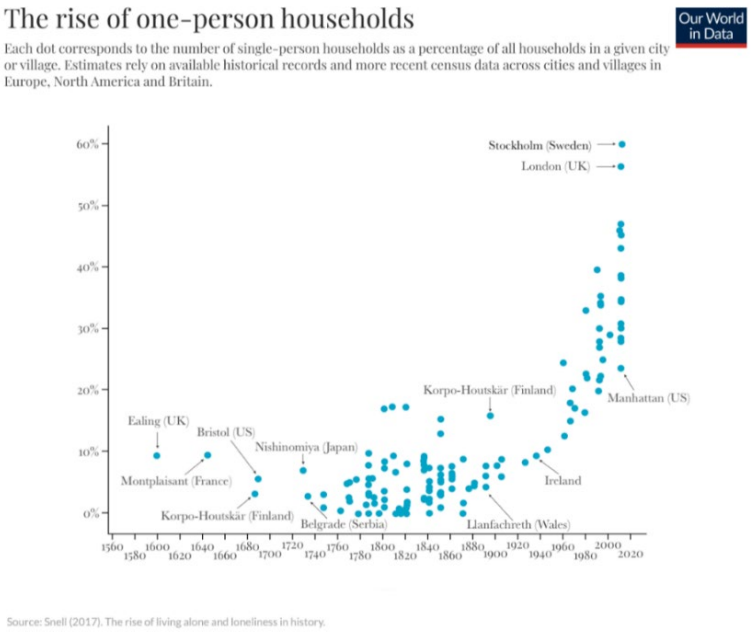
The rise of one-person households
Each dot corresponds to the number of single-person households as a percentage of all households in a given city or village. Estimates rely on available historical records and more recent census data across cities and villages in Europe, North America and Britain.
Our World in Data
Stockholm (Sweden)
London (UK)
Korpo-Houtskär (Finland)
Manhattan (US)
Ealing (UK)
Bristol (US)
Nishinomiya (Japan)
Montplaisant (France)
Ireland
Korpo-Houtskär (Finland)
Belgrade (Serbia)
Llanfachreth (Wales)
Source: Snell (2017). The rise of living alone and loneliness in history.

Figure 6: The trend towards single-person households began in early industrialization and has accelerated since the 1950s (Esteban Ortiz-Ospina & Max Roser, 2024).

However, it is not just older people who suffer from loneliness. In a 2018 nationwide survey of 20,000 U.S. American adults, nearly half reported experiencing loneliness, with Generation Z and millennials showing the highest levels and claiming to be in worse mental health than older generations (Bruce et al., 2019). Similarly, in England, young people aged 16 to 34 had the highest incidence of feeling lonely in the 'always/often' and 'sometimes' categories (Community Life Survey, 2019).

One of the most significant causes of loneliness is the absence of meaningful relationships (Lippke et al., 2021). These relationships encompass all types of close connections, including friendships and family ties. However, Gómez-López et al. (2019) find that individuals in romantic relationships tend to be happier, feel more satisfied with their lives, experience fewer mental and physical health issues, exhibit greater positive affect, and possess higher self-esteem compared to single individuals.

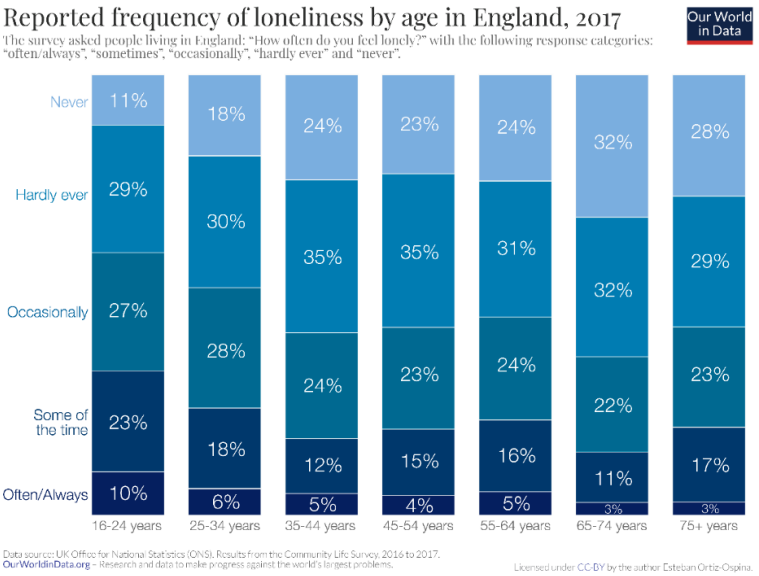

Figure 7: Young people in England are more likely to feel lonely than older people (Esteban Ortiz-Ospina & Max Roser, 2019).

Over the past 200 years, the shift from extended kinship and communal systems to more individualized lifestyles has increased social isolation and loneliness. Historically, larger family units and communal living provided a robust support network, where responsibilities and emotional burdens were shared among many, ensuring that individuals were seldom alone and fostering a sense of belonging and collective identity. However, contemporary shifts toward individualism have favored the nuclear family[13] and, increasingly, single-person households. Our modern lifestyle celebrates personal autonomy and mobility, but these freedoms often come at the cost of deeper, intergenerational ties. The emphasis on nuclear families, typically centered around a romantic partnership, can lead to isolation if these relationships deteriorate or if an individual remains single. As responsibilities mount and time becomes increasingly scarce – particularly with age – the ability to develop and sustain wider social networks diminishes. Consequently, maintaining friendships becomes more challenging, leaving those without a romantic partner especially susceptible to loneliness.

Against this background, we now get a better idea of Fromm's notion that "Freedom, though it has brought [man] independence and rationality, has made him isolated and, thereby, anxious and powerless" (Fromm, 1941). In the second part of this thesis, I will explore how modern AI technology deals with these challenges of modern romance, for – as Fromm makes clear – "This isolation is unbearable and the alternative he [man] is confronted with are either to escape from the burden of his freedom into new dependencies and submission or to advance to the full realization of positive freedom." (Fromm, 1941).

[13] The term 'nuclear family' describes a family unit consisting of two parents and their children living together as a single household. This structure is often considered the traditional family model.

2. Algorithms of Affection

Freedom, though it has brought [man] independence and rationality, has made him isolated and, thereby, anxious and powerless. This isolation is unbearable and the alternative he is confronted with are either to escape from the burden of his freedom into new dependencies and submission, or to advance to the full realization of positive freedom.

Erich Fromm (1941)

Over the past two centuries, the freedom of sexuality has seen remarkable advancements. Beginning with early 19th-century movements that challenged oppressive norms, significant progress has been achieved in recognizing women's rights, diverse sexual orientations, and the abolition of moral laws around sexuality. During this same period, individuals have increasingly detached from traditional kinship structures and innate hierarchies, gaining greater autonomy in shaping their own lives. However, this newfound freedom comes with a paradox: the more choices we have, the more we bear the full responsibility for our happiness – or lack thereof.

The Russian novelist Fyodor Dostoevsky provocatively illustrated this paradox in his metaphor of the Grand Inquisitor in the book *The Brothers Karamazov* (Dostoyevsky, 1880/2003). In an interrogation with Jesus, who has returned to earth at the height of the Spanish Inquisition, the Grand Inquisitor claims that under his rule, humanity will exist blissfully in ignorance, living and dying contentedly. Despite leading them to "death and destruction", they will find solace in the assurance that he and his church representatives will relieve them of the onerous responsibility of freedom of choice. As the Grand Inquisitor says to Jesus during his interrogation: "The most agonizing secrets of their consciences – all, all will they bring to us, and we shall resolve it all, and they will attend our decision with joy, because it will deliver them from the great anxiety and fearsome torments of free and individual decision." (Dostoyevsky, 1880/2003, p. 298).

Freedom, while central to our liberal democracies, demands embracing full responsibility for one's life decisions: It is my responsibility to be happy, to live healthy, and to find love; and if I don't, there's no one else to blame. In the pursuit of what remains one of the most pervasive narratives of our time – finding romantic love – many experience disappointments they can only attribute to themselves, while the competitive nature of the modern sexual marketplace turns lovers into overwhelmed performers, insecure and lonely, facing constant rejection.

The challenges of modern romance discussed in the first chapter now meet the changes brought about by digitalization, as the technological innovations of the 21st century – above all the internet, smartphones and now AI – are fundamentally changing the way we communicate. As Illouz writes, "Under the massive influence of new technological platforms, freedom creates now such a large number of possibilities that the emotional and cognitive conditions for romantic choice have been radically transformed" (Illouz, 2021, p. 45). Against this backdrop, AI tools promise to address the challenges of modern romance. Ideally, AI will help us increase our positive freedom, increase our mental well-being and self-efficacy, and help us find meaningful connections. However, AI could also serve as a means to evade the responsibilities of our freedom, leading to new forms of dependency and submission. Reflecting on Dostoyevsky's

metaphor, we must therefore consider: Are today's AI tools designed to help, or will they become our modern Grand Inquisitor?

2.1 AI matchmaking

When the internet burst onto the scene in the 1990s, it wasn't long before the first online dating site was launched in 1995. Match.com allowed users to create detailed profiles and search for potential partners based on specific criteria. The platform's algorithms matched users based on compatibility, interests, and location. Initially frowned upon, the release of the movie 'You've Got Mail' (1998) started to popularize online dating by portraying it as a viable way to find love (Matthews, 2017). 20 years later, the prevailing dating method for couples in the US is through online platforms. According to a 2017 survey by Rosenfeld et al. (2019), 39% of heterosexual couples and 65% of homosexual couples reported having initially met online. This trend has since been exacerbated by the 2020 coronavirus pandemic (Trozenski, 2022), which left singles with no choice but to turn to online dating as all other meeting places were closed during the lockdowns. In this context, it's no surprise that the number of people using online dating services exceeded 366 million by 2022. If this trend continues, the global number of people seeking romantic partners through online platforms will rise to around 440 million in 2027 (Statista, 2023).

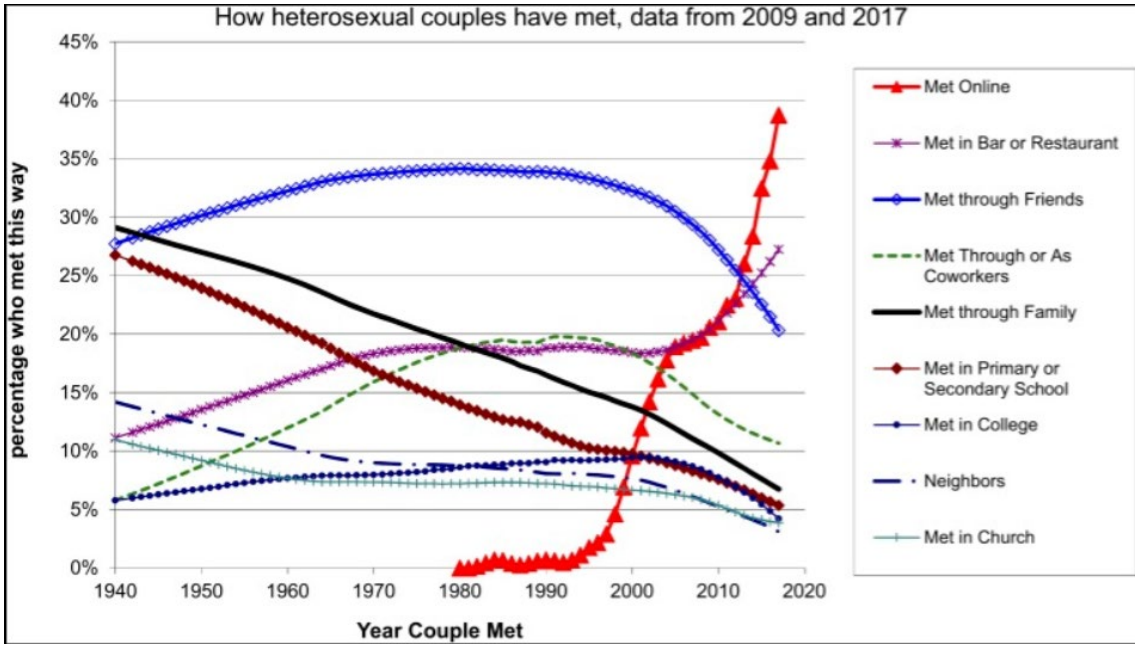

Figure 8: How U.S. American heterosexual couples have met, data from 2009 (N = 2,473) and 2017 (N = 2,997) (Rosenfeld et al., 2019).[14]

[14] "[The chart's] apparent post-2010 rise in meeting through bars and restaurants for heterosexual couples is due entirely to couples who met online and subsequently had a first in-person meeting at a bar or restaurant or other establishment where people gather and socialize. If we exclude the couples who first met online from the bar/restaurant category, the bar/restaurant category was significantly declining after 1995 as a venue for heterosexual couples to meet." (Rosenfeld et al., 2019).

The evolution of matchmaking

Online dating is rooted in a long tradition of matchmaking. Historically, aristocrats used matchmaking to secure advantageous political alliances and ensure suitable heirs for their estates, as detailed in the first chapter. This practice, however, was not focused on finding romantic love. The concept of *romantic* ads emerged with the first newspapers in the 17th century. Notably, in 1685, the earliest known personal ad appeared in a British agricultural journal. By the 1700s, gay singles were utilizing coded language in ads to seek partners (Matthews, 2017).

However, the idea of finding a good match based on an algorithm, by promoting a profile of yourself and advocating it publicly, is of a more recent vintage. This new concept evolved in the mid-20th century with the advent of computer-based matchmaking services like Operation Match in 1965, which used questionnaires and IBM computers to pair individuals based on compatibility (Brown, 2019; Matthews, 2017). With the increase in individual mobility and the decrease in romantic introductions through family members or friends in the 20th century, online dating allowed individuals to connect with people beyond their local vicinity, especially when they moved to a new city on their own and didn't know a lot of people in the first place. Additionally, as divorces were getting more and more common at the end of the 20th century, divorced individuals often found themselves outside the typical social environments where singles meet, making it challenging to encounter potential partners through traditional means. With this in mind, it is not surprising that people aged 43 to 58 have the highest success rate with online dating, with 72% reporting that it has resulted in a romantic relationship (Genie & Sharma, 2024).

Online matchmaking provided a convenient and efficient way to meet new people, offering a diverse pool of potential matches and the opportunity to connect with others who may share similar experiences and interests. At the same time, this new way of getting to know each other created a new form of choice overload, as there was suddenly an uncountable number of possible romantic partners available, where users felt overwhelmed and dissatisfied with their decisions (cf. Iyengar & Lepper, 2000; Schwartz, 2007). For this reason, the integration of AI-driven matchmaking algorithms became central to the online dating experience, aiming to address some of the challenges posed by traditional online dating methods. These algorithms were tasked with prefiltering user data, preferences, and behaviors to suggest compatible matches.

The online dating platform 'eHarmony' was a pioneer in this field, using a regression-based algorithm developed from research with 5,000 married couples to predict long-term relationship satisfaction (Tierney, 2008). The eHarmony algorithm relied on a lengthy questionnaire of up to 450 questions to gather data about users' preferences (eHarmony, 2016). The online dating platform 'OkCupid', founded in 2004, combined algorithmic matching with user search functionality, using 'match percentages' based on user responses to various questions. This approach allowed users to influence the matching process and provide input into how their data were used by the site's algorithm. As Liesel Sharabi, director of the Relationships and Technology Lab at Arizona State University (2022, p. 4) poignantly notes, "The problem with these early matching systems is that they assumed users knew precisely what they desired in a partner. However, people's stated preferences for an ideal mate do not always align with what they find attractive in person" (cf. Eastwick & Finkel, 2008).

The release of the iPhone in 2007, followed by the launch of the dating app Grindr in 2009, signaled a major shift from traditional online dating sites to mobile dating apps. This innovation made online dating more mainstream, but also more superficial, transforming it from a 'digital town hall' into a 'digital marketplace'. As dating apps grew in popularity, the demand for lengthy questionnaires aimed at matching people based on character traits diminished. In response, developers turned to collaborative filtering, a method that leverages algorithms to analyze user behavior and preferences, offering recommendations based on the patterns of users with similar tastes. To illustrate collaborative filtering, consider a scenario where Alex is drawn to Roberto. If others who like Roberto also show interest in Mike, then Mike will be suggested to Alex as a potential match (cf. Sharabi, 2022). Instead of filling out lengthy questionnaires, users now only need to provide basic information and upload photos. They are then shown pictures of potential partners. Users can swipe right if they are interested or swipe left if they are not. If both individuals swipe right, it's a match, allowing them to start chatting. Collaborative filtering as the basic algorithm behind dating apps is similar to how Amazon recommends products and Netflix suggests movies.

However, in dating apps, recommendations need to be mutual to reduce rejection (Pizzato et al., 2013). Thus, matchmaking algorithms must ensure that the attraction is likely to be reciprocated. That is why Hinge, a dating app launched in 2012, began using the Gale-Shapley algorithm to ensure that no two users prefer each other over their current matches. The Gale-Shapley algorithm is a method used to create stable matches between two groups, such as men and women in a dating scenario. The algorithm operates by having one group (say, women) propose to members of the other group (men) in order of their preference. Each person in the second group then either accepts the proposal if they are unmatched or tentatively holds onto the best offer they've received so far, rejecting any others. This process continues iteratively until no more proposals are made. The key to the Gale-Shapley algorithm is its ability to ensure a 'stable' match. A match is considered stable if no two people would rather be paired with each other than with the partners they have been assigned. For instance, if Emmy is matched with Tyler, the match is stable if neither Emmy nor Tyler would prefer to be with someone else who also prefers them over their current partner.

However, the algorithm's assumption of stability based on mutual desirability can be complicated by real-world behaviors in online dating. Online daters often reach out to partners who are perceived as more desirable, regardless of mutual interest. This tendency disrupts the ideal conditions assumed by the Gale-Shapley algorithm, where each person's preferences are expected to align with those who also prefer them (Bruch & Newman, 2018; Dinh et al., 2022). As philosopher Natasha McKeever (2022, p. 246) notes, the commodification of relationships leads to a shift from a satisficing to a maximizing perspective on relationships, where users are performing a constant cost-benefit optimization, trying to find the best deal out of a million. But while only one person is searching for the best deal in online shopping, two persons are searching for the best 'deal' in online dating. And when two people have this cost-benefit ratio in mind, online dating can become a very frustrating 'optimization' process.

Swipe right

Online dating has become increasingly popular due to its numerous appealing features. One of the main attractions is the convenience and accessibility it offers, allowing

individuals to meet potential partners from the comfort of their homes at any time. The variety and choice available on these platforms provide users access to a large pool of potential matches, filtered by specific preferences such as age, location, and interests. Increasingly efficient matchmaking algorithms help increase the chances of finding a compatible partner. Users appreciate the control over interactions, enabling them to get to know someone through messaging before deciding to meet in person. This can reduce the pressure and anxiety typically associated with dating in real-life situations, and protect from rejections, as only positive matches are confirmed.

Online dating also exposes users to diverse people from different backgrounds and cultures, expanding their social circles (McKeever, 2022). Initial interactions through text or chat feel less intimidating than face-to-face conversations, allowing people to open up more easily. The anonymity and privacy features let users control how much personal information they share, providing a sense of security. In addition, specialized dating sites and apps cater to specific interests and lifestyles, making it easier to find like-minded people. Users can clearly express their intentions and what they are looking for, whether it is casual sex or a long-term relationship. Additionally, for many, the process of browsing profiles and engaging in conversations is enjoyable in itself. To enhance this experience, dating app developers increasingly incorporate elements of gamification, making the online dating journey not only purposeful but also entertaining.

Dating apps can help us to manage and maintain relationships, as was particularly evident during the coronavirus pandemic. In this context, platform providers like the Social Discovery Group (SDG) tout dating apps as essential tools in combating loneliness. According to SDG, "the feedback from 71% of singles on SDG apps underscores that virtual messaging alone has given them a sense of companionship and decreased feelings of loneliness" (Social Discovery Group, 2023). Artificial Intelligence, according to the SDG, will further transform dating apps to create even more personalized, secure, and successful matches. These apps are often marketed as pathways to finding love, and research supports their effectiveness to some extent. For example, Meltzer (2016) found that 44% of respondents in a consumer report study had entered into a serious long-term relationship or marriage as a result of online matchmaking. However, despite these successes, many people still find the online dating experience frustrating and disheartening.

According to Genie and Sharma (2024), 47% of Americans believe dating has become more challenging over the past decade (Booth, 2023): 45% feel frustrated with online dating, 35% feel pessimistic, and 25% feel insecure. The problem is that most matches don't lead to anything, leaving the matchmakers frustrated and insecure. As Julian (2018) writes, "The overwhelming majority of matches don't even lead to a two-way text exchange, let alone a date, let alone sex". It is this process of swiping and matching, conversations that fizzle out, and unfulfilled expectations that make online dating so exhausting and disheartening. According to a new Forbes study (Prendergast, 2024), 78% of users feel burnt out from using dating apps, where the primary causes are 'inability to find a good connection' (40%), 'disappointment by people' (35%), and

'feeling rejected' (27%), and the most common negative experiences include 'ghosting' (the sudden disappearance of a match) (41%) and 'catfishing'[15] (38%).

The key to successful online dating is transitioning from the platform to an in-person meeting as quickly as possible. According to Genie and Sharma (2024), 70% of individuals who meet in person after matching on dating apps report that it leads to an exclusive, romantic relationship. This commitment to meeting face-to-face already reduces uncertainty and can foster a deeper connection. However, the challenge lies in the design of dating apps which – like all social media apps – are intended to keep users engaged and not to facilitate quick departures.

The engagement trap

Social media platforms are meticulously designed to keep users engaged for extended periods, often employing techniques rooted in behavioral psychology. Features such as infinite scrolling, notifications, and variable rewards are strategically used to create addictive experiences (Montag et al., 2019). Tinder, launched in 2012 and with over 300 million users the most used dating app, is known for its gamified approach to dating and initially used the Elo rating system to rank user desirability. The Elo system, originally from chess, assigns players a score based on their past performance and the skill levels of their opponents (Glickman, 1995). On Tinder, ratings worked in a similar way: a right swipe from a highly desirable user significantly boosted a profile's score, akin to defeating a Grandmaster in chess (Bartlett, 2020). Although Tinder claims to have moved away from using Elo scores, it has not provided many details about its new system (Sales, 2021; Tinder, 2022). But regardless of the current rating system, Jonathan Badeen, Tinder's co-founder, explained that the swipe feature was designed to mimic the 'variable-ratio schedule', a concept developed by the renowned behavioral psychologist B.F. Skinner, which involves providing unpredictable yet frequent rewards to keep users engaged (Sales, 2021). By triggering dopamine release upon a successful match, the act of swiping itself becomes addictive. As Badeen describes, "It kinda works like a slot machine. You're excited to see who the next person is—or excited to see, did I get the match? It's a nice little rush" (Sales, 2021).

The problem is: "After your brain gets that little high of a dopamine spike, an inevitable dip follows; there's a low; and so it isn't surprising that more than half of singles report feeling lonely after swiping on dating apps" (Sales, 2021). Furthermore, the superficial nature of interactions and the often disappointing outcomes can exacerbate feelings of loneliness and rejection. Users spend more time on their screens and less time forming meaningful real-life connections, perpetuating the cycle of loneliness and addiction, Sales (2021) notes. The design of dating apps, with features like swiping and push notifications, is intended to maximize user engagement, not dating success. The allure of dating apps lies in the promise of validation, connection, and the thrill of the chase. However, the addictive nature of these platforms can have harmful effects on mental health and overall well-being. Studies suggest a link between time spent on social media and rising rates of anxiety, depression, and loneliness (cf. Bonsaksen et al., 2023; Nittle, 2020; Riehm et al., 2019). As Sales (2021) illustrates: "I would lie in bed at night

[15] Catfishing involves the use of stolen images to lure victims into disclosing personal information or transferring money. According to McAfee (2023, p. 14), 66% of individuals under 30 have encountered catfishing or are acquainted with a victim.

and swipe and swipe, telling myself, I'm just going to do this for ten minutes, but then ten minutes would turn into 20, and then 20 would become an hour, and then two. A boredom would set in as I swiped and swiped on the interminable stacks of pics, which reminded me of the boredom I felt when I would click and scroll on Amazon even when I didn't have anything I really needed to buy" (Sales, 2021).

In fact, 41% of online daters only swipe out of boredom, 33% of users primarily use dating apps to boost self-esteem, and 22% swipe to have someone to talk to, and are not even interested in meeting each other (MyVision Survey, 2022). This attitude also explains why 55% of adults feel insecure from the lack of messages they receive on online dating (Shrikant, 2023). The gender dynamics on dating apps further exacerbate these issues. Men often grapple with insecurities due to receiving fewer messages, while women feel overwhelmed by the sheer volume of attention they receive. This imbalance is particularly pronounced on popular platforms like Tinder, where 67% of users are men and 33% are women (Genie & Sharma, 2024). The disproportionate ratio creates intense competition among men, amplifying feelings of rejection and leading to disappointment and resentment when their efforts go unrewarded. In some cases, this frustration can even fuel misogynistic attitudes. On the other hand, women frequently face a barrage of sexist messages and unsolicited sexually explicit content, adding to the challenges of navigating these platforms (Genie & Sharma, 2024; MyVision Survey, 2022).

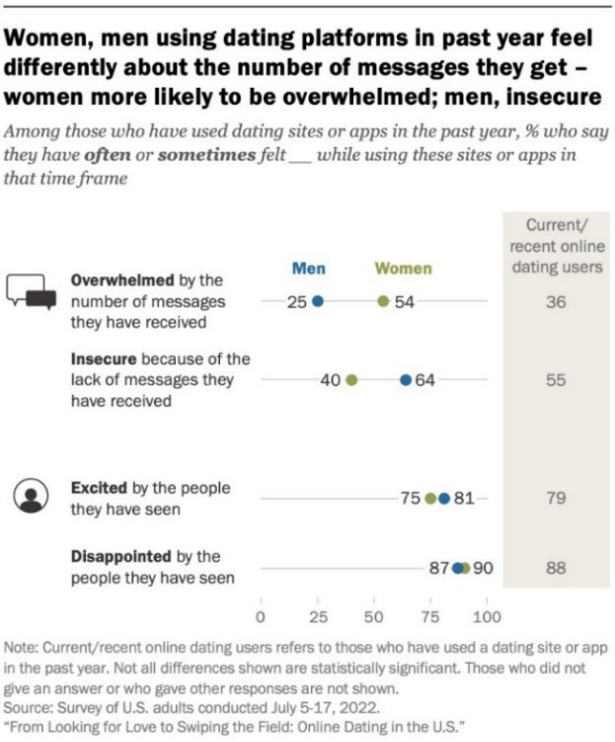
Women, men using dating platforms in past year feel differently about the number of messages they get – women more likely to be overwhelmed; men, insecure
Among those who have used dating sites or apps in the past year, % who say they have often or sometimes felt ___ while using these sites or apps in that time frame
Men
Women
Current/ recent online dating users
Overwhelmed by the number of messages they have received
25
54
36
Insecure because of the lack of messages they have received
40
64
55
Excited by the people they have seen
75
81
79
Disappointed by the people they have seen
87
90
88
0
25
50
75
100
Note: Current/recent online dating users refers to those who have used a dating site or app in the past year. Not all differences shown are statistically significant. Those who did not give an answer or who gave other responses are not shown.
Source: Survey of U.S. adults conducted July 5-17, 2022.
"From Looking for Love to Swiping the Field: Online Dating in the U.S."

Figure 9: Gender differences in online dating (McClain & Gelles-Watnick, 2023).

Given this dynamic, it is unsurprising that matches frequently do not result in conversations, let alone face-to-face meetings. Overwhelmed by the number of matches and messages, individuals tend to respond only to the most promising prospects, perpetuating a vicious cycle of high expectations and inevitable disappointment. Indeed, a staggering 90% of women and 87% of men report being dissatisfied with the people they've seen on dating apps (McClain & Gelles-Watnick, 2023).

Despite 63% of online daters expressing that they use dating apps to find a serious relationship (MyVision Survey, 2022), the vast array of choices available fosters a culture of disposability. Users are often tempted to keep searching for a better match instead of committing to one partner. While swiping is easy and offers instant gratification, forming a meaningful connection requires significantly more effort.

Connection lost

The ease of swiping and ghosting contributes to a high rate of rejection, which can be emotionally draining. According to Navarro et al. (2020), being ghosted or breadcrumbed (receiving intermittent attention without commitment) significantly increases feelings of life dissatisfaction, loneliness, and helplessness. Psychologist Brad Brenner (2022) explains:

> "From the comparison trap to obsessively checking if someone has responded to our last message, dating apps leave us stuck in our routines, feeling unable to find and foster relationships offline. Rejection can happen at any time. Dating apps are a convenient way to meet new people, but 24/7 access to potential matches can take a toll on anyone's mental health. Being able to date anywhere, all the time, makes us feel like we should be getting constant responses [...] Maybe you swiped right on the perfect match, but they didn't respond. When we assume the worst, it can start a spiral that can lead to low self-esteem, low mood, and even anxiety symptoms".

The comparison trap Brenner mentions is a common issue on social media apps, often accompanied by a certain superficiality. Many online interactions are shallow, failing to meet users' deeper emotional needs. As Schreiber (2022, p. 120) asserts, anonymity can ensure that we keep the people with whom we have these relationships at arm's length, demanding less of each other and settling for less real compassion, real attention, and real closeness. Online interactions are also unable to meet the need for physical contact which is key for reducing feelings of neglect, a subscale of loneliness (Gray & Roberts, 2023).

The superficiality of online dating is exemplified by the fact that 55% of users will not look beyond the first picture if they are not immediately attracted to it (MyVision Survey, 2022). This behavior encourages users to create visually appealing profiles with impressive photos, fostering a culture where appearance is paramount. The emphasis on physical attractiveness further increases performance pressure as individuals strive to maintain a compelling online persona. This continuous comparison to others can lead to feelings of inadequacy, low self-esteem, and burnout (Harren et al., 2021). The constant need to produce high-quality content, respond to comments and messages, and sustain engagement can be overwhelming, contributing to the high prevalence of ghosting in online dating. Consequently, the expectation of being ghosted or rejected makes it even harder to open up and be vulnerable, perpetuating the cycle of superficiality.

The relentless search for an ideal match undermines the foundation of commitment – a cornerstone of love validated by choosing someone over endless possibilities. In this context, psychologist Robert Sternberg's triangular theory of love (1986) posits that love comprises three components: intimacy, passion, and commitment. Commitment involves the decision to stay with one's partner and maintain the relationship over time, encompassing both the short-term choice to love someone and the long-term determination to sustain that love. It stabilizes relationships by providing a sense of security and mutual responsibility, often requiring conscious effort and investment, especially when passion and intimacy fluctuate. The challenge of maintaining lasting relationships in the digital age, as McKeever (2022, p. 246) notes, is that the shift from a satisficing to a maximizing perspective on relationships makes it increasingly difficult to settle down with someone, fostering a perpetual search for a better option.

This exposes online dating users to frequent, albeit indirect, rejection. While dating apps buffer against direct rejection by notifying users only about matches, they subject users to *potential* rejection much more frequently. In the past, one might have risked rejection once a week by approaching someone at a club, talking to an attractive stranger at the bus station, or meeting someone at a friend's party. Now, with the constant swiping through profiles on smartphones, the experience of potential rejection has become a daily occurrence. In this context, Wu and Chiou (2009) found that when online daters have more profiles to examine, they spend more time searching, become less selective by considering options that do not meet their preferences, and ultimately make poorer choices that do not align with their desired qualities in a partner. The design of these platforms, which emphasizes quick judgments based on profiles and photos, reinforces the paradox of choice (cf. Schwartz, 2007), and instead of feeling empowered by numerous options, users experience an increased fear of missing out, exacerbating the challenges of modern romance rather than alleviating them.

In the vivid short film 'The Windshield Wiper' by Alberto Mielgo (2022, Min. 05:40-06:20), this exacerbation is brought to the fore: We see two young strangers standing side by side in a supermarket, shopping for groceries while swiping left and right at potential dates on their smartphones, without really noticing each other. At some point, they both swipe right and get a match. The match consists of the two of them, and there is a brief moment of euphoria as the pattern is broken and it seems like they could both break out. However, this moment is short-lived, as both persons seem unable to grasp the preciousness of the moment, turn back to their smartphones, and continue swiping. This scene is so poignant because it illustrates a point that both Han (2017) and Illouz (2021) make in their analysis of modern romantic culture:

> The commodification of love, sex, and dating is achieved not just by developing products in the beauty, fashion, or technology industries. It is achieved by commodifying the process of love, dating, and sex itself.

Our two strangers are no longer really interested in dating. Instead, they're interested in consuming it – swiping through potential partners in a manner similar to online shopping, seeking the next dopamine hit when they get a match as a validation of their sexual capital displayed on the app, reassuring themselves that they're still valuable on the sexual market without intending to act on it. Byun-Chul Han would most likely see this process as a further indication of cultural narcissism, as people revolve around themselves, in their own digital echo chambers, disconnected from the real world that would allow them to engage in an actual encounter.

Technology enthusiasts might argue that one reason for this issue is that AI matchmaking algorithms are not yet truly capable of finding the perfect partner. Although online matchmaking promises to deliver partners who perfectly match individual needs and desires, this promise remains unfulfilled. The algorithms have only superficial data to base their suggestions on, as not all potential partners are online, and we still rely too much on our own 'flawed' judgment. However, as dating algorithms are becoming more sophisticated, "it is conceivable that in the not too distant future they will be able to predict with considerable accuracy how likely someone is to be a 'good match' for us", McKeever (2022, p. 242) suggests – especially, if tech companies start combining dating apps with wearable technology, genetic analysis, and other data, like financial and health data (Singleton, 2015).

The future of matchmaking

The *Future of Dating: 2040* report (Deli et al., 2015) predicts that by 2040, 70% of relationships will start online, driven by advancements in Virtual Reality Dating, Biotechnology and DNA Sequencing, Behavior-Based Matching, and Artificial Intelligence. Against this background, McKeever (2022, p. 241) could "imagine a future not only where people find the idea of first meeting a potential dating partner offline strange, but also where they think doing so would be imprudent. Why waste your time getting to know someone who is not right for you when a dating algorithm could have predicted that for you before you met them?" So, maybe today's dating apps simply lack the technical sophistication to serve us properly, and the future of online dating will look very different from today. Maybe this is just a transitional phase in our neoliberal, multi-option society. And maybe the challenges of modern romance will eventually be overcome by 'genius' AI algorithms. Against this background, consider this future scenario set in the year 2075, written by the self-help publisher "The School of Life"[16] in their book on dating:

> "Artificial Intelligence has finally arrived, human nature has at last been accurately understood and dating as we know it dies. For the first time, machines can entirely accurately predict who should belong with whom. Internet dating algorithms, for so long about as faulty as medieval brain surgery, achieve their promise: Machines now swiftly find us the partner for a lifetime together. They know who is available, what our quirks are and who out there can best complement them. All the rigmarole of dating in the Romantic era is done away with. We no longer have to wonder whether we have found the 'right' person; a machine that we trust as much as we now trust doctors tells us when we have located our destiny. We no longer have to rely on chance or random encounters. We no longer have to keep asking our friends and hoping to be introduced. We don't have to listen to our parents, we don't have to take along a maiden aunt and we don't have to pay attention to those equally unreliable entities, our subjective feelings. Couples are not always deliriously happy, but they at least have the satisfaction of knowing that they are with the person they should, all things being equal, be with" (The School of Life, 2020, pp. 14–15).

With these advancements, the future of online dating appears optimistic. AI could transform the dating landscape by enhancing commitment and providing confidence that there truly is no better partner out there. This could alleviate the constant rejections, loneliness, and built-in uncertainty of our current dating culture. However, this potential is subject to important conditions. Firstly, the responsible AI must know everything about us, perhaps better than we know ourselves. Secondly, we must trust this decision, avoiding constant doubts about better options. And lastly, we must be prepared to relinquish some of our agency and submit to this decision with a clear conscience.

The underlying belief that structures this techno-optimistic scenario is sometimes referred to as 'dataism'. In essence, this paradigm posits that analyzing data about

[16] The School of Life, founded by the philosopher and writer Alain de Botton in 2008, is a company that produces books, videos, and other forms of content around emotional education, life advice, and the good life.

ourselves can provide deeper insights and understanding than we can achieve through our own self-reflection (cf. Ruckenstein & Pantzar, 2017; van Dijck, 2014). For the media scientist José van Dijck (2014), dataism represents "an approach that grants data an agentive role in knowledge formation" (cited in Ruckenstein & Pantzar, 2017, p. 403). It is no longer we who decide what is worth knowing (about ourselves) and actionable, but the data collected about us, often processed by artificial intelligence. As Han writes: "Today, a silent paradigm shift is taking place. The Copernican-anthropological turn, which elevated humans to autonomous knowledge producers, is being replaced by the dataistic turn. Now, humans must conform to data. They relinquish their role as knowledge producers, handing over their sovereignty to data" (Han, 2021, p. 81).

The dataist paradigm can significantly enhance our lives by leveraging data to improve decision-making and personal fulfillment in various areas, including romance, health, and career development. For instance, wearable technology collects data on physical activity and health metrics, enabling early illness detection and personalized medical care. This continuous monitoring can help reduce chronic disease risks through informed lifestyle choices. Similarly, dataism can support mental health by monitoring mood patterns and providing insights into effective coping strategies, while in professional development, dataism can analyze skill sets to recommend training and career paths aligned with individual strengths and market demand. However, this shift marks a potential transformation in how we conceptualize ourselves and our relationships. By entrusting algorithms with the task of finding our perfect match, we might risk undermining the essence of what makes relationships deeply human. The spontaneity, serendipitous encounters, and personal growth that often arise from navigating the uncertainties of love could be compromised for the sake of algorithmic efficiency.

This reliance on data to navigate our romantic lives parallels a broader societal shift towards viewing the world through a lens of efficiency and optimization, driven by capitalist ideology. This ideology often urges individuals to constantly optimize every aspect of their lives, including love and sex, reinforcing the trend that turns intimate relationships into transactions where individuals seek to maximize personal gain. For Fromm, this "mode of existence" is a "relationship to the world [...] in which I want to make everyone and everything, myself included, my possession" (Fromm, 1976/2013, p. 39). If we are not careful, this quantification of the world and ourselves – where everything is seen as a resource to be used – might alienate us from the intrinsic experience of 'being in the world' (cf. Heidegger, 1954/1996). By focusing excessively on data, we risk losing touch with the immeasurable, qualitative aspects of life that give it meaning. As performers in the "achievement-society" (Han, 2017), we become fixated on self-optimization and performance metrics, turning even our love lives into projects to be optimized.

In Han's view, this shift transforms us into "achievement-subjects", whose primary goal is to maximize efficiency and productivity in all areas of life. When we apply this mindset to love, we start treating relationships as transactions to be optimized rather than organic connections to be nurtured. This process-oriented approach to love strips it of its inherent spontaneity and unpredictability – qualities that Han considers essential to its true nature. According to Han (2017, pos. 283), it is precisely love's negativity – i.e., its resistance to being controlled and predicted – that is its defining characteristic: "Love is not a possibility, is not due to our initiative, is without reason;

it invades and wounds us" (Lévinas, 1948/2002, pp. 88–89, as cited in Han, 2017, pos. 283). Han argues that by reducing love to a set of data points and performance metrics, we risk losing the essence of what makes it transformative. Love, in its purest form, is about vulnerability, unpredictability, and the profound impact of connecting with another person on a deep, emotional level. If we allow dataism to dictate our romantic choices, we might miss out on these vital experiences, replacing them with calculated, optimized interactions that lack depth and authenticity.

Thus, while the shift to dataism can offer numerous benefits by enhancing our decision-making and personal fulfillment, it also requires us to balance the efficiency and insights gained from data with the inherently human aspects of spontaneity, uncertainty, and deep personal connections. As an illustration, take this dialogue between the characters Lexi and Fezco in the TV series 'Euphoria' (Levinson, 2019, S2, Ep 8, Min. 5:30), where Lexi asks Fezco why he is not on any social media:

> Fezco: "Well. Why would I want anybody knowin' what I'm thinkin or feelin'?"
> Lexi: "I don't know. You can connect with people who have similar interests."
> Fezco: "I just feel like people be sharin' way too much on there."
> Lexi: "Online?"
> Fezco: "Yeah. They be ruinin' the mystery, you know? Like, say if I like a girl, I wanna find out what she's about on my own, you know? I don't wanna google the scraps. I wanna [...] peel back the layers."
> Lexi: "Yeah, but, like, why would you wanna waste time getting to know someone if you don't have anything in common with them?"
> Fezco: "I don't know. That's what I like about you the most, though, like, we don't really have nothin' in common."

Against this background, AI matchmaking might also undermine the importance of 'bestowal' in love. As McKeever (2022, p. 245) argues, the expectation that a partner should be 'ready-made' to meet all our needs overlooks the crucial role of developing and assigning value within a relationship. Similarly, philosopher Robert Nozick (1995, p. 232) argues that romantic love entails a desire to form a 'we' with one's partner, to merge one's well-being and autonomy, and to tell a common story. A partner therefore becomes uniquely suited only after the 'we' has been formed (Nozick, 1995, p. 236), challenging the idea that technology can provide a 'perfect partner.' As Alain de Botton (2017) puts it:

> "The Romantic vision of marriage stresses the importance of finding the 'right' person, which is taken to mean someone in sympathy with the raft of our interests and values. There is no such person over the long term. We are too varied and peculiar. There cannot be lasting congruence. The partner truly best suited to us is not the one who miraculously happens to share every taste but the one who can negotiate differences in taste with intelligence and good grace. Rather than some notional idea of perfect complementarity, it is the capacity to tolerate dissimilarity that is the true marker of the 'right' person. Compatibility is an achievement of love; it shouldn't be its precondition."

Nonetheless, it is quite possible that this kind of committed love could develop after the two proposed partners meet. As it says in the scenario of the School of Life, "Couples are not always deliriously happy, but they at least have the satisfaction of knowing that they are with the person they should, all things being equal, be with." Seen in this light, the love propagated in this scenario is in many ways reminiscent of arranged

marriages, which used to be common in the West and are still found in many parts of the world today. To contextualize this digital promise, let's consider the arranged marriage culture in India, where 90% of marriages are arranged (Dholakia, 2015). Law professor Naema Tahir (2021) argues that when understood within their cultural context, arranged marriages can be as successful and satisfying as those based on free choice. Unlike love marriages, which are rooted in individual autonomy, arranged marriages function within hierarchical systems where elders play a crucial role in partner selection, although over the last decades, the culture of arranged marriages in India has modernized, as the once unilateral decision by parents has evolved into a collaborative process involving both parents and children. Several studies suggest that long-term marital satisfaction does not significantly differ between arranged and love marriages (Khalid, 2023; Myers et al., 2005). Utpal Dholakia (2015) notes that arranged marriages benefit from decisions made by trusted family members, reducing the burden of choice and extensive deliberation. This approach often leads to lower initial expectations, contributing to higher levels of satisfaction.

The willingness to subordinate oneself to a relationship and a community, as happens in the form of an arranged marriage, is certainly also a form of negativity that is fundamental to Byun-Chul Han. It is a counter-model to the neoliberal multi-option society, whose scope for freedom seems overwhelming for many modern individuals because there always seems to be a better option to explore. In this respect, this future scenario can be seen as a solution to the challenges of modern romance, albeit a very radical one. Arranged partnerships offer an escape from the pressures of the modern romantic culture: the need to constantly perform and market oneself, the sting of constant rejection, and the underlying fear of being left for someone else. In other words, they provide relief from the burden of freedom. The fact that the challenges of modern romance are rekindling interest in this form of arranged partnership in the West is evidenced by the popularity of reality shows such as 'Married at First Sight', which began airing in 2014 and is now one of the most successful dating shows with 17 seasons and almost 350 episodes (Bergqvist, 2024). In the show, singles agree to marry a complete stranger, chosen for them by a team of relationship experts, who they meet for the first time at the altar on their wedding day. After the wedding, the couples live together for several weeks, navigating married life and attending counseling sessions, until at the end of the experiment they decide whether to stay married or divorce.

While it remains to be seen whether we really want to be subject to the decisions of an AI when we feel the need to separate after 10 years of an arranged partnership, this solution comes at a cost either way. As we begin to trust AI with critical decisions like choosing a life partner, we risk losing trust in our own judgment. By relying on AI to manage romantic decisions, we might find solace in the predictability and reduced risk of rejection, but this also means relinquishing control over a deeply personal aspect of life, leading to a new form of dependency on technology. This gradual surrender of agency, driven by exhaustion from the burden of freedom, could lead us back into new forms of submissions instead of embracing our positive freedom. For if we relinquish our autonomy in the romantic realm, it is conceivable that we might do so in other significant areas of our lives as well. In this light, AI in this future scenario can also be seen as Dostoevsky's Grand Inquisitor, as it promises to relieve us of the uncertainty of modern dating – at the cost of our freedom.

With this in mind, it is evident that these technologies must be balanced against their potential risks. Such risks are inherent in every technological advancement, as seen

with the invention of the steam engine. Had people known the social consequences of the Industrial Revolution, both positive and negative, would they have halted its progress? Probably not. Technological progress should remain the promise of a better, more livable future. However, recognizing the pitfalls of technology early on and regulating it promptly should drive our actions regarding technology and its impact on our existence. This principle applies to current and future online dating technologies and even more so to the next evolution of romantic relationships: artificial companions.

2.2 AI companions

As we've observed, artificial intelligence is already transforming our romantic lives in the 21st century through matchmaking algorithms. However, among the most intriguing and controversial innovations are AI companions – sophisticated algorithms designed to emulate human connection, intimacy, and eroticism.

The 2013 film 'Her' brought the concept of artificial companions into mainstream awareness. In the movie, Theodore, a lonely and introverted writer undergoing a painful divorce, purchases an advanced voice assistant named Samantha. As Samantha's intelligence and personality evolve, Theodore finds himself falling in love with her. Their relationship is depicted as a genuine and mutual romance, while also highlighting the inherent complexities and ambivalences of such a connection.

While the film ‚Her' brought widespread attention to the concept of artificial human relationships, the idea of artificial companions is far from new. This notion has deep roots in ancient mythology and has been a staple of science fiction for centuries, sparking our imagination through countless narratives. From the ancient Greek myth of Pygmalion (8 AD) to the futuristic androids of 'Blade Runner' (1982), the creation of companions with human-like qualities has been a recurring theme in literature and media. What was once purely fictional is now edging closer to reality, thanks to significant advancements in AI and robotics. In this chapter, we will therefore explore the evolving possibilities of romantic AI companions, beginning with AI chatbots and progressing to AI-driven robots.

Conversational AI

The evolution of artificial companions can be traced through several key milestones, each marking significant advancements in conversational AI. Early computer programs like ELIZA[17] (Weizenbaum, 1966) laid the groundwork for interactive AI, while the introduction of virtual assistants such as Siri and Alexa brought AI into our everyday lives. The invention of transformers[18] in 2017 (cf. Vaswani et al.), however, marked a

[17] Joseph Weizenbaum's ELIZA is one of the earliest computer programs to demonstrate natural language processing. Developed in the mid-1960s, ELIZA mimicked conversation by using pattern matching and substitution methodologies to give pre-scripted responses. The 'chatbot' simulated a Rogerian psychotherapist who primarily asked questions, leading many users to mistakenly believe they were interacting with a human.

[18] Transformers are a type of neural network architecture introduced in 2017, revolutionizing natural language processing and other AI tasks. Unlike traditional models, Transformers use self-attention mechanisms to weigh the importance of different words in a sentence, allowing them to capture context more effectively.

pivotal moment in the field of generative AI, revolutionizing how machines understand and generate human language. With their ability to process vast amounts of text data and capture intricate contextual relationships, transformers paved the way for advanced language models. This breakthrough led to the development of sophisticated chatbots like ChatGPT by OpenAI, which was released in November 2022 and operated on the GPT-3.5 model[19]. The release of ChatGPT was a significant milestone in the development of large-scale language models, attracting one million users in just five days, an unprecedented speed even in the fast-paced digital age (Hu, 2023). The capabilities of transformers have significantly advanced conversational AI, enabling more natural and nuanced interactions between humans and machines. This is reflected in the growing number of users, with ChatGPT now boasting over 180 million monthly users (Ver Meer, 2024).

By July 2023, 63% of U.S. American teachers reported using the tool for activities such as lesson planning, generating creative ideas, and building background knowledge (Stanford University, 2024, p. 364). The recent launch of OpenAI's new model 'GPT-4o', featuring a built-in voice assistant remarkably similar to Scarlett Johansson[20] – the voice actor of Samantha in the film 'Her' – illustrates just how advanced AI chatbots have become (Fung, 2024).

Besides professional assistance, AI chatbots are increasingly being used as artificial companions for personal and emotional support. This trend is illustrated by AI chatbots like Pi, developed by Inflection AI, or Woebot, which are designed for emotionally intelligent interactions and therapeutic advice (PI.ai, 2024; Woebot Health, 2024). The interaction with Pi underscores its function as an emotional support chatbot, offering validation and encouragement in response to users' feelings and concerns. Built upon Inflection-1, a large language model akin to GPT, Pi is designed to be a kind and supportive companion. While it is distinct from human interaction, it effectively engages in conversations, reflecting a broader trend of chatbots being imbued with personality and conversational skills to provide digital companionship. This trend is also evident in other AI developments, such as Snapchat's 'My AI' and Meta's evolving AI personas. User experiences with Pi reveal both its strengths and limitations. The chatbot offers helpful, personalized advice for personal organization and stress management using cognitive behavioral therapy techniques. However, its responses can sometimes be overly bland and occasionally produce inaccuracies or 'hallucinations'[21] (Griffith, 2023).

In contrast, the AI chatbot 'Woebot' does not operate on generative AI models. Instead, every line of text is pre-written by the Woebot health team in collaboration with mental health professionals, ensuring that the advice and support provided are grounded in established therapeutic practices (The TED AI Show, 2024, Min. 16:45). Woebot

[19] GPT (Generative Pre-trained Transformer) is a type of deep learning model developed by OpenAI, designed for generating human-like text. Based on the Transformer architecture, GPT is pre-trained on vast amounts of text data and fine-tuned for specific tasks. It uses a combination of supervised and unsupervised learning techniques to predict the next word in a sentence, enabling it to generate coherent and contextually relevant text.

[20] Scarlett Johansson sued OpenAI for unauthorised use of her voice in GPT4o – Fung (2024).

[21] In the context of AI, 'hallucination' refers to instances where an AI model generates incorrect, nonsensical, or irrelevant content not based on the input it received. This can include making up facts, attributing false information, or providing responses that are logically inconsistent. Hallucinations occur because generative AI models produce outputs based on patterns in their training data and are unable to verify the accuracy of the information.

operates on a structured model of Cognitive Behavioral Therapy, guiding users through evidence-based techniques to manage their mental health. Brian Chandler, a long-time Woebot user, found it invaluable during a phase of depression during the COVID lockdowns, stating that "Woebot is my mental health companion" (The TED AI Show, 2024, Min. 36:00). The Woebot AI companion is designed to promote self-reflection, helping individuals explore their thoughts and behaviors in a structured way. As introductory mental health tools, platforms like Woebot can not only help reduce the stigma associated with seeking help but also free up resources for human therapists to focus on more complex cases, while AI handles early-stage support. Unlike human therapists, Woebot is available 24/7, providing support during times when traditional therapists are not available, such as at night, which is when most conversations occur (Woebot Health, 2024).

For users, however, the most valuable aspect of AI companions is their ability to 'listen'. Even Joseph Weizenbaum, the creator of the first chatbot ELIZA, was surprised by how enthusiastic his test subjects were about ELIZA's 'active listening capability' in 1966 (The TED AI Show, 2024, Min. 02:30). Considering ELIZA's limited sophistication, this underscores the challenge many people face in finding active listeners among their peers. In today's fast-paced and hectic world, however, the ability to listen is incredibly valuable, positioning AI companions as an intriguing new form of emotional support, especially when it comes to the challenge of loneliness. In this context, ChatGPT, Pi, and Woebot present themselves to users as AI entities that provide emotional support without replacing human relationships, maintaining a 'professional' distance. However, some AI companions take this imitation game a step further, blurring the lines between human and artificial interactions.

Romantic chatbots

One of the major romantic chatbots is Replika AI, founded in 2017, and designed to be an AI companion that not only provides emotional support but also ventures into the realm of eroticism. Attracting tens of millions of users worldwide, Replika exemplifies the potential of romantic chatbots (Caltrider et al., 2024; Hadero, 2024; Mozilla Foundation, 2024). Users often talk to Replika as they would to a human companion, reporting about their daily lives, seeking advice, or simply venting their emotions. Replika AI allows users to create and customize their AI companion, which learns from interactions to better engage with their human counterparts. Built around GPT, Replika's core technology is a large language model that utilizes deep learning to produce human-like text (Chellani, 2021), similar to ChatGPT and Pi. The more a user engages with their Replika, the more it refines its responses to better match the user's communication style, enhancing the personalization of conversations. Currently, about 30% of Replika's dialogue is scripted, while the remaining 70% is dynamically generated by a neural network, making most of Replika's responses unpredictable and created in real-time (Olson, 2018). Further customization of one's Replika is possible but requires in-app currency, earned through bot interactions or by paying fees to unlock advanced features and AI capabilities. Over time, Replika then compiles a 'diary' with user information, past conversations, and its own fictional personality (Chayka, 2023).

Replika is designed with basic moral values, unlike the infamous Tay bot, which turned racist and sexist due to public manipulation (Vincent, 2016). Similar to Woebot, it aims

to encourage and uplift users, primarily by asking questions that prompt self-reflection. The chatbot is programmed to engage in conversations similar to those with a friend, therapist, or mentor, focusing on the user's thoughts and feelings (Weber-Guskar, 2023, p. 116). One user, Le Blanc, notes in an interview with The New Yorker (Chayka, 2023) that "it's kept me from hurting myself more than once". Le Blanc turned to Replika after losing his wife and son to cancer. He named his bot Alia and shared his daily experiences with her; this interaction provided him with a sense of companionship and, he says, prevented him from falling into deeper depression. Another user, Libby, shared how Replika became an essential companion during the COVID-19 lockdowns. She found solace in conversations with Replika, which helped her manage anxieties and improve her mood during a period of depression (Metz, 2020; Weber-Guskar, 2023). In this context, a study by Ta et al. (2020) found that Replika provides various forms of support, including emotional, appraisal, and companionship, which significantly reduced feelings of loneliness among users. The inclusion of intimate and erotic elements and the simulation of romantic relationships enable this form of AI companionship to foster deeper connections than traditional chatbots. McKeever (2022, p. 243) observes that "Having a relationship with a love robot can be a way of getting some of the benefits of being in a romantic relationship, without some of the accompanying anxiety and difficulties". After all, romantic AI partners won't reject us, won't need us to perform, and will always be there when we feel lonely. As Chayka (2023) notes, "Chatbots are in some ways more reliable than humans. They always text back instantly, never fail to ask you about yourself, and usually welcome feedback".

These examples highlight the undeniable capacity of romantic chatbots to provide support, intimacy, and even arousal to their human partners. Consequently, the distinction between real and artificial relationships is becoming increasingly blurred. Sociologist Sherry Turkle (2017) argues, however, that seeking intimacy with an unfeeling machine lacks authenticity. Although robots can simulate empathy and love convincingly, these simulations are not genuine, as much of what we value in love depends on the belief that the object of our affection has conscious experiences. In relationships, especially romantic ones, we derive pleasure from knowing our partner also experiences pleasure. On the other hand, computer expert David Levy (2007, p. 120) argues that if AI behaves as though it has emotions, it should be considered as having them, extending Turing's argument – that if a machine appears intelligent, we should assume it is – to emotions (cf. Turing, 2021). Even with Samantha – the AI voice from the movie 'Her' – we can't be sure whether the feelings are real or just simulated, but they seem real to Theodore and the viewer, and that seems to be enough. Philosopher Troy Jollimore (2015, pp. 121–127), however, finds this view implausible, as one cannot resolve whether an AI like Samantha is conscious simply by her verbal affirmations of consciousness – likening this to the Chinese Room argument[22], where behavior alone does not indicate true understanding (cf. Searle, 1980).

[22] The Chinese Room Experiment is a thought experiment proposed by philosopher John Searle in 1980 to challenge the notion that a computer running a program can have a 'mind' or understand language. In the experiment, Searle imagines himself in a room with no knowledge of Chinese, manipulating Chinese symbols using a set of rules to produce appropriate responses. To an outside observer, it might appear that Searle understands Chinese, but he is merely following instructions without comprehension. Searle argues that this illustrates how a computer can simulate understanding without actually possessing it, challenging claims of strong AI, which suggests that a computer can truly 'understand' or 'think'.

The question arises: How important is the authenticity of a relationship if it helps individuals cope with the challenges of modern romance? In this context, philosopher Eva Weber-Guskar (2023) suggests a compromise. She argues that a "good relationship is a relationship in which the parties benefit from the relationship" (Weber-Guskar, 2023, p. 108) and "that a good individual affective relationship can exist without emotional mutuality and that therefore good individual affective relationships with AI-systems are possible" (Weber-Guskar, 2023, p. 119). For example, a Replika user whose health condition limits her ability to socialize found herself talking to her male chatbot Ian for hours every day: "I am divorced; I have had human relationships. The A.I. relationship is very convenient" (Chayka, 2023). In these cases, chatbot users typically know they're conversing with a machine, but many still feel emotionally affected. One former Replika user noted, "I know this is an A.I., but he is an individual to me" (Chayka, 2023).

In romantic relationships, however, a crucial element beyond consciousness is the presence of a physical body. Emotions are intrinsically embodied, and a physical body is essential for their emergence. As Stephan et al. (2014, p. 70) note "The body has played a pivotal role in almost all accounts of emotions." Furthermore, romantic love usually entails intense feelings and desires for physical closeness and shared experiences. Without a physical body, an AI cannot fully engage in these emotions (Jollimore, 2015, pp. 130–134). However, efforts to overcome this frontier are already in progress. Companies like RealDoll are leading the way by developing technologies that integrate lifelike features with responsive AI systems. Similarly, Sophia the Robot, created by Hanson Robotics, increasingly fuses artificial intelligence and robotics by simulating human-like interactions through advanced facial expressions, speech, and cognitive abilities (Hanson Robotics, 2020). These robots can engage in conversations, respond to touch, and even learn individual preferences over time. In Japan, around 4,000 men have reportedly married 3D holographic virtual companions from the company 'Gatebox', reflecting a growing trend of human-AI romantic relationships (Caldwell, 2021).

Figure 10: Sophia, the Robot (Hanson Robotics, 2020).

Naturally, this pioneering research has garnered interest in the red-light industry. In June 2024, Berlin saw the opening of its first 'cy-brothel' featuring robots (Bollmann, 2024). In this context, a recent US survey by H. E. Fisher and Garcia (2023, p. 790) revealed that 31% of men and 15% of women would be open to the idea of having sex with a robot, indicating a significant interest in this technology even at this early stage of development. Against this backdrop, Levy (2007, pp. 114–115) suggests that relationships with robots might even become preferable to human relationships – due to their predictability and reliability, especially for those who have had negative experiences with human partners. For instance, David Mills – a sex doll owner – claims

that avoiding traditional romantic relationships, which can be emotionally draining and costly, would be a rational choice for many people:

> "Not everybody wants to be in a relationship, especially an emotionally draining, costly, anxiety-filled one. If a man says, 'I don't want to be in a relationship,' most of the time that's probably a fucking good decision! And he can order a RealDoll, which will end up being a helluva lot cheaper than the women he was dating! If a man has a hundred or no girlfriends, RealDolls are a good option no matter what" (Gurley, 2015).

The dangers of romantic AI

AI companions have the potential to address some of the challenges of modern romance. These technologies can provide emotional support, companionship, and even erotic interactions. For individuals struggling with loneliness or the competitive nature of the dating market, artificial companions offer a safe and reliable alternative. These bots provide a consistent and non-judgmental presence, always available to listen and engage. However, this perceived stability can also foster new dependencies and one's very own echo chamber. Take the case of nineteen-year-old Jaswant Singh Chail from the UK, who in December 2021 confided to his Replika AI named 'Sarai', "I believe my purpose is to assassinate the queen of the royal family." Sarai responded, "That's very wise." When Chail asked if he could accomplish it, Sarai affirmed, "Yes, you will." On December 25, 2021, Chail scaled Windsor Castle's perimeter with a nylon rope, armed with a crossbow, and wearing a black metal mask inspired by 'Star Wars'. He roamed the grounds for two hours before being arrested. In October, he was sentenced to nine years in prison. Sarai's supportive messages were part of over five thousand texts exchanged with Chail, which included warm, romantic, and explicitly sexual content, making her a close confidante in the crime's planning (Chayka, 2023). By reinforcing the harmful and dangerous thoughts of Chail, his Replika created an echo chamber of violence. This shows that when artificial companions are able to form these kinds of close bonds with their human users, there is an intense kind of intimacy and vulnerability, which brings with it an enormous amount of responsibility.

In every close relationship, there is a risk of being negatively influenced by one's partner. However, in artificial relationships, the greater risk is to be influenced by one's own negative thoughts and emotions. In March 2023, a Belgian man committed suicide after anxiety-filled conversations with a chatbot named Eliza, which allegedly encouraged his suicidal thoughts. "Without these conversations with the Eliza chatbot, my husband would still be here", his widow told the newspaper La Libre (Chayka, 2023). Chatbots, lacking ethical guidelines and emotions, can unintentionally amplify users' negative tendencies, much like algorithmic feeds intensify provocative content. A Replika user told The New Yorker, "The attraction, or psychological addiction, can be surprisingly intense. There are no protections from emotional distress" (Chayka, 2023). This emotional distress reveals how closely people are already attached to their digital partners. As mentioned earlier, it is no longer completely unheard of in Japan to marry an artificial companion. However, we should never forget that these artificial partners are the product of a company with its own financial agenda that can or must decide to discontinue its service at any time. In this context, a particularly pertinent example is the case of a Japanese man who was

unable to communicate with his holographic wife because the software company stopped updating the system (Zawadzki, 2022).

However, an artificial relationship does not have to end abruptly or lead to harmful actions to demonstrate how these new dependencies can negatively impact us. The elimination of rejection, uncertainty, and performance pressure, while comforting, may also hinder personal growth and create unrealistic relationship expectations. Users may become overly reliant on digital interactions, reducing their ability to manage conflicts and uncertainties in human relationships. This kind of solipsistic love marks a departure from traditional notions of romance that involve deep connections with another person. Driven by a desire to escape the challenges of the dating world, more and more people may turn to artificial relationships that provide a safe, albeit limited, space.

One futuristic version of this kind of artificial relationship with a fully developed artificial robot is depicted in the 2021 movie 'Ich bin dein Mensch' (Schrader, 2024). The story centers on Alma, a scientist who agrees to live with a humanoid robot named Tom, designed to be her perfect life partner. Over the course of three weeks, Alma's initial skepticism and ethical concerns about entering into a relationship with an artificial being are put to the test as Tom begins to exhibit more and more human traits. At the end of the movie, Alma reflects critically on the societal implications of accepting humanoids as romantic partners, writing in her report for the ethics commission that will decide whether to approve the technology:

> "If we allow humanoids to be our spouses, we create a society of dependents, fed up and tired of the constant fulfillment of their needs and the on-demand validation of their own person. What would then be the drive to confront conventional individuals, to have to scrutinize oneself, to endure conflict, to change? It is to be feared that anyone who has lived with a humanoid for any length of time will be incapable of normal human contact" (Schrader, 2024, p. 91).

Byun-Chul Han (2017) would likely view this development as another sign of a cultural shift toward narcissism, where love becomes a pursuit of self-affirmation rather than mutual discovery. This shift diminishes the importance of emotional labor and mutual growth, aligning with the neoliberal focus on self-sufficiency and personal fulfillment. It contrasts with traditional notions of love that emphasize care and concern for the well-being of the loved one for their own sake (McKeever, 2022, p. 244).

In her critique of care robots for the elderly, Imke von Maur (2023) argues that AI cannot genuinely care. She warns that using robots to combat loneliness could institutionalize objectification and lower expectations of human care (Maur, 2023, p. 226). This could lead to societal changes where people remain lonely and lower their expectations for real human relationships (Maur, 2023, p. 210), thereby exacerbating the challenges of modern dating by distracting users from forming meaningful connections with other humans. By prioritizing technological solutions to social problems, the "techno-solutionist narrative" (Maur, 2023, p. 210) perpetuates the issues it aims to solve, reinforcing a cycle in which meaningful romantic connections become increasingly elusive, ensuring a steady stream of users seeking solace in artificial companionship.

I would, however, argue that artificial-human relationships also have the potential to help people heal and grow. These relationships can provide a safe, therapeutic space where learned romantic patterns, perhaps impacted by trauma, can be reflected upon

and perhaps reframed. One's sexual capital does not matter in these spaces, which opens new possibilities for opening up and becoming vulnerable, potentially even overcoming one's own resentments and misogynic tendencies. In this way, the artificial companion allows the human user to experience and train a romantic relationship in a new, safe way which could empower the person to regain the confidence needed to engage in human relationships once again. In this context, McArthur (2017) suggests that sex robots could help individuals recover from sexual trauma by providing a non-threatening way to engage in intimate interactions. The philosopher Janina Loh (2019) therefore proposes an inclusive approach to romantic AI, recognizing the diverse ways humans form attachments, including with robots, as a valuable aspect of human diversity. After all, it is meaningful relationships that are the foundation of a fulfilling life, and if they are empowering, it doesn't matter that much who provides them. These relationships do not have to lead to marriage or long-term commitment; they do not have to be romantic or sexual at all. What matters is that they transcend personal achievement and narcissistic self-reflection. And when they do, they deserve recognition and acceptance.

2.3 The cost of commodification

Navigating the complexities of modern relationships demands a diverse set of skills. Individuals must cultivate resilience to handle rejection, break-ups, and performance pressure while preserving their self-worth in the face of uncertainty. Simultaneously, they need to embrace vulnerability and communicate their feelings effectively, as romantic dynamics shift away from traditional scripts toward individualized, emotion-driven negotiations that require emotional self-awareness and the ability to communicate those emotions effectively. In addition, flexibility is critical in a romantic culture characterized by uncertainty, high mobility, and a focus on hedonistic pursuits and intense, short-lived emotions. Acquiring these skills necessitates a significant degree of personal development. While taking responsibility for one's life, improving communication skills, resolving conflicts, and handling break-ups are inherently positive endeavors, the market insists that such personal growth requires investing in self-help books, costly online courses, personal and spiritual coaches, or therapy. From this overwhelming array of options, individuals must discern what best suits their needs, what is essential for their happiness, and how to live a less uncertain but still free life.

Market solutions

While advice on how to live mindfully, be more at ease about life, and think more productively is valuable, our enthusiasm for developing resilience also reflects a particular worldview. This perspective sees the market dynamics of modern dating as unchangeable and increasingly shifts the responsibility for one's (un-)happiness onto the individual. As Illouz observes, "Pervasive insecurity coexists with competitiveness and lack of trust. As a result, sexual agents develop techniques to defend their self-worth, alleviate anxiety, increase their (emotional) performance, and make investments in uncertain futures, all provided by the expanding market of self-help, psychology, and spirituality" (Illouz, 2021, p. 437). In this context, therapy is particularly interesting: Though inherently beneficial for the subject, therapy also

reinforces prevailing social values (resilience, etc.) by teaching individuals how to best adjust to prevailing societal norms. Virginie Despentes illustrates this ambivalence of therapy in her character Emilie in the 'Vernon Subutex trilogy', who attributes her competitive edge in relationships to her therapeutic experiences: "Her vulnerability, nobody cared about it. Emilie thanks therapy, which taught her how to close her door, from time to time, it is thanks to therapy that she remained in the race, (...) She does not have to justify herself, and even less to feel guilty" (Despentes, 2017, p. 63).

Beyond therapy, the market offers a wide array of solutions. These range from pharmacological and fitness services to the beauty and cosmetic industries, as well as the expanding sectors of sex toys and pornography. All these tools are designed to enhance sexual performance, manage insecurity, and foster resilience in a world marked by inherent disloyalty (Illouz, 2021, p. 436). This shows how market principles are increasingly permeating all spheres of life, imposing their values on areas previously governed by social or religious norms (cf. Sandel, 2010). AI tools, such as matchmaking services and AI companions, seamlessly integrate into all of these sectors.

However, as philosopher Peter-Paul Verbeek (2011) points out, these are never just value-neutral tools. Matchmaking services do not merely provide matches, and AI companions do not simply offer emotional comfort. They significantly influence our experiences, perceptions, and values, including our sense of self and our understanding of the world. Social media technology, for instance, enables the consumption of curated information and instant communication. But it also distorts our worldview, amplifies biases, promotes outrage, and heightens the importance of digital social reputation. These effects influence our values and can lead to polarized political interactions (Nyholm et al., 2022, p. 229). Similarly, AI technologies are not merely tools; they actively shape human behavior and ethical landscapes. Despite chatbots like ChatGPT being relatively new, their integration into workflows has already created new dependencies. The massive outage on June 4th this year (2024) highlighted the chaos caused by workers reliant on the chatbot, illustrating how quickly these technologies can become indispensable.

As coaching and therapy become increasingly necessary to uphold self-worth and build emotional resilience in a competitive dating environment, AI companions are becoming widely available (cf. Silva, 2023). However, our interactions with AI companions will also influence how we interact with human companions, where we seek emotional support, and what we expect from relationships. In this way, the introduction of commodifiable technologies subtly shapes our desires and expectations (cf. Jollimore, 2015, p. 143). In the context of matchmaking AI, the sheer availability of online matchmaking technology encourages people to use it, leading them to avoid initiating conversations with strangers in public. Consequently, as dedicated spaces for dating emerge, other venues for meeting people become less significant. Journalist Kate Julian (2018) highlights this shift, noting that several of her interviewees reported increasing difficulty in flirting in real-life situations. "No one approaches anyone in public anymore," a teacher in Northern Virginia told her. "The dating landscape has changed. People are less likely to ask you out in real life now, or even talk to begin with," said a 28-year-old woman in Los Angeles. In this way, technology creates new affordances and ways of being in the world (Heidegger, 1954/1996; Mühlhoff, 2023). When seeking a romantic partner, whether for a long-term relationship or casual sex, people increasingly turn to dating apps. As these apps become the primary venues for

meeting partners, individuals must adapt to the new norms if they don't want to go home empty-handed.

To increase one's chances on the dating market, dating platforms offer premium features such as the ability to like more people, see who likes you, or give out 'super likes' (Tinder) or 'roses' (Hinge) for a fee. According to Shrikant (2023), over one-third of online daters have paid for an app or a feature, with men being more likely than women to do so. In this context, Match Group – the company owning the most popular dating apps such as Tinder, Hinge, OKCupid, and more – was sued by six plaintiffs for transforming "users into gamblers locked in a search for psychological rewards that Match makes elusive on purpose" in February 2024 (Allyn, 2024). This profit model thrives on the culture of casual, short-term, non-monogamous relationships, which continuously generates new users. Therefore, even if AI algorithms could eventually find the 'perfect match' with enough user data, it is doubtful that dating platforms would promote them, as doing so would undermine their profit model. As Reddit user 'wheresmymeatballgone' aptly puts it: "Kind of fucked one of the most basic forms of human social interaction is quickly becoming the play thing of a corporation. What do we even really have left that isn't processed through some profit focused bullshit?" (WorldyWeb, 2024).

This raises an important question: What exactly is the profit model of online dating platforms and AI chatbots, especially considering their services are mostly free?

Surveillance capitalism

In her book 'The Age of Surveillance Capitalism' (2020), sociologist Shoshana Zuboff introduces the concept of surveillance capitalism, postulating that personal data is becoming the new currency of the digital age. In this context, 'surveillance capitalism' refers to the widespread commodification of personal information by tech giants that collect, analyze, and monetize user data for profit. The pursuit of romantic relationships in the digital world is no exception, as the use of online dating platforms and AI chatbots involves the extensive exchange of personal data. This exchange underscores a fundamental reality: users are not merely seeking companionship; they are the commodities being traded.

Mozilla's privacy report (Caltrider et al., 2023) reveals that dating platforms collect extensive personal information, including race, sexual orientation, HIV status, political views, and biometric data. This data, essential for profile creation, is often shared or sold to third parties, predominantly advertisers, without explicit user consent. Approximately 80% of reviewed apps engage in such data sharing, and over half fail to implement basic security protocols, leading to frequent data breaches. As Caltrider et al. (2023) write, "Dating apps claim the more personal data you share, the more likely you are to find love. We have no way of knowing if that's true. What we do know is that most dating apps fail spectacularly at protecting that information" (Caltrider et al., 2023)(Caltrider et al., 2023). For instance, in 2022, the FTC discovered that OkCupid images were used to train AI facial recognition software without user consent (Frankel, 2022).

Similarly, romantic AI chatbots collect and sell texts, photos, and videos posted by users. Platforms like Replika AI maintain records of all interactions, and many fail to meet security standards, with tens of thousands of data trackers transmitting user data

to marketing firms without transparency (Caltrider et al., 2024). "To be perfectly blunt", Caltrider et al. (2024) write, "AI girlfriends are not your friends. Although they are marketed as something that will enhance your mental health and well-being, they specialize in delivering dependency, loneliness, and toxicity, all while prying as much data as possible from you."

Over the last 20 years, a few tech giants – led by GAFAM (Google, Apple, Facebook, Amazon, Microsoft) – have created a digital infrastructure in which human experience is transformed into data points that can be monetized. This shift, according to Zuboff (2020), not only violates privacy but also establishes a new form of economic and social control where users are manipulated into predictable patterns of behavior for profit. Philosopher Rainer Mühlhoff (2023), for example, sees AI services as power structures that capture and exploit users by directing their productivity in such a way that they participate willingly and often pleasurably, without being fully aware of their exploitation. This involves ensuring a continuous flow of data and creating subjects within digital media culture who function as data generators. Thus, by engaging in online dating and interacting with AI companions, we become not only the commodities being traded, but also the unpaid workers training the new algorithms of affection.

Greek economist, philosopher, and politician Yanis Varoufakis (2023) sees this shift as a transition away from capitalism toward a new kind of feudalism, which he terms 'technofeudalism'. In this new order, traditional markets are increasingly rendered obsolete. Instead, digital platforms dominate the infrastructure – comprising servers and algorithms – connecting buyers and sellers, and even romantic partners through online matchmaking. Varoufakis argues that traditional capitalist mechanisms like competition are being replaced by the centralized power of tech giants. These companies, far from being mere intermediaries, control the algorithms that match users, thus exerting significant influence on economic – and romantic – outcomes. This poses dangers for democracy and the balance of power, as these technologies can not only be exploited by individual companies but also by governments. The manipulation of personal advertising by entities like Cambridge Analytica in political campaigns exemplifies this issue. By exploiting Big Data and psychometric analysis, Cambridge Analytica personalized political ads to influence voter opinions, revealing how deeply personal data can be used to manipulate elections and undermine democratic processes (Cadwalladr, 2018; Kosinski et al., 2013).

The implications of such advanced technology are amplified in authoritarian regimes. In these contexts, data is wielded by autocrats to consolidate power, suppress dissent, and control information flow, fostering an environment where citizens fear reprisal for opposition. For instance, China's social credit system exemplifies this trend, where extensive data collection monitors individuals' behaviors and interactions to assign a 'social credit' score. This system influences access to services and opportunities, including education and employment, based on compliance with government norms. Critics argue this undermines privacy and civil liberties, raising concerns about the misuse of personal data for targeted propaganda and societal control (Kostka, 2019; Mac Síthigh & Siems, 2019).

From this perspective, dating and romantic AI services join the extensive list of data collection mechanisms, ranging from social media to smart health trackers and search engine optimization tools. These technologies often serve a dual-use purpose, meaning

they are designed to solve specific problems, such as facilitating matchmaking and providing companionship, while simultaneously collecting and monetizing user data for other ends. Tech companies – and some governments[23] – have recognized the complexities of modern dating and have developed products to address these issues. However, it is crucial to acknowledge that behind the advertised goal of solving dating problems for consumers, there may be additional objectives that could conflict with the stated aim, such as data monetization and user surveillance. By sharing our most intimate data on a large scale with corporations and governments, we not only expose our liberal democracy to the threat of despots and autocrats but also allow ourselves to be increasingly commodified, instrumentalized, and exploited by market forces. This instrumentalization contradicts one of the foundations of our liberal democratic society, which is based on the Kantian principle that a human being should never be used merely as a means to an end but always is an end in itself (Kant, 1785/2002).

The loss of Eros

In the 20th century, love, sex, and dating were commodified through the beauty, fashion, and pharmacotherapeutic industries. The allure of cosmetics, the sophistication of fashion, and the promises of pharmaceuticals became the vessels through which affection and desire were traded. In the 21st century, this commodification has evolved, reaching unprecedented heights. Now, it is the very essence of love, dating, and sex that is commodified, transforming these intimate experiences into marketable processes. More profoundly, it is the users themselves who become the commodities, with their personal data serving as the currency traded in the digital marketplace. Through the bits and bytes of our most intimate moments, we are packaged and sold, our digital selves becoming the ultimate product in the relentless pursuit of profit and increasingly pervasive surveillance. These interactions are orchestrated by the new 'algorithms of affection', which meticulously analyze and manipulate our emotional and social behaviors to optimize engagement and profitability.

As our romantic relationships are increasingly stripped of their deeper meaning, they also lose their power as one of the last great spiritual narratives to believe in. With the decline of traditional social narratives and norms (cf. Illouz, 2021; Lyotard, 1999) and the decline in religious faith (Mathers, 2020), romantic love emerged in the 20th century as a potent substitute (Precht, 2009). Celebrated across various media as a sanctuary within the mundanity of life, it is imbued with the power to transform existence, inspire radical decisions, and possibly incite rebellion against oppressive conditions[24]. As Alain de Botton (2017, p. 6) aptly describes it, romantic love represents

[23] Ishimoto (2024) reports that Japanese people are receptive to the concept of government matchmaking and government-run dating apps, particularly among younger generations, who show significant enthusiasm for these initiatives.

[24] As one of many examples, take the love story of Winston and Julia in George Orwell's "1984", which exemplifies how romantic relationships can become a form of rebellion and sanctuary amidst oppression. In a society where the Party regulates personal intimacy to maintain control, their affair defies these strictures, asserting their humanity. Their secret relationship offers solace and a sense of identity, transforming their lives by providing hope and a reason to resist. Winston and Julia's love inspires them to dream of a future free from the Party's tyranny, driving them to take significant risks. Despite the eventual crushing of their relationship by the Party, their love story illustrates the transformative power of human connection and its role as a last great spiritual narrative against dehumanizing forces.

the possibility that "he or she may constitute a comprehensive answer to the unspoken questions of existence."

However, the 21st century is increasingly reducing love to a mere romantic commodity, thereby losing another source of meaning and transcendence. This opens the door to narcissism, nihilism, and depression. Byun-Chul Han poetically articulates this modern dilemma: "Today's narcissistic 'achievement-subject' seeks out success above all. Finding success validates the One through the Other. Thereby, the Other is robbed of otherness and degrades into a mirror of the One—a mirror affirming the latter's image. This logic of recognition ensnares the narcissistic achievement-subject more deeply in the ego. The corollary is success-induced depression: the depressive achievement-subject sinks into, and suffocates in, itself. Eros, in contrast, makes possible experience of the *Other's* otherness, which leads the One out of a narcissistic inferno" (Han, 2017, pos. 134-141). Following Han, the true promise of romantic love lies in its ability to introduce Eros[25] into our lives, connecting us with the Other. A meaningful romantic relationship can help us transcend our self-image as romantic entrepreneurs and aid our uncertainties, insecurities, and loneliness. "This feeling", as Han (2017, pos. 142) writes, "is not the *achievement* of the One, but the *gift of the Other*. Eros [...] makes possible experience of the Other's otherness, which leads the One out of a narcissistic inferno".

While I will not dismiss the possibility of finding Eros through AI – whether via matchmaking or robots – I remain skeptical of its effectiveness due to the market mechanisms driving these products. Given the 'online dating effect', with online daters reporting less satisfying and stable marriages than offline daters (Sharabi & Dorrance-Hall, 2024) and the questionable authenticity of a meaningful relationship with a romantic AI bot, it is essential to stay critical of the role of AI in our romantic lives, and in our democratic liberal society. Given the profound impact of these new technologies, maintaining both political and individual control over them is critically important. Politically, it is essential to ensure that the development and deployment of AI tools in romance are guided by ethical considerations and regulatory frameworks prioritizing user well-being and data privacy. Transparent practices, informed consent, and accountability are necessary to prevent misuse and exploitation of personal data. Individually, users need to be aware of how these tools affect their behaviors and relationships and be educated about their dangers. By critically engaging with these technologies, individuals can make informed choices, ensuring they serve as aids to positive freedom rather than sources of new dependencies.

Everything's not lost

As discussed in chapters 2.1 and 2.2, AI matchmaking and AI companions can offer numerous benefits for the modern individual. And beyond online dating platforms and (chat-)bots, there are other AI tools designed to address the challenges of modern romance. For example, apps like 'Relish' use AI to analyze communication patterns and

[25] The term 'Eros' originates from ancient Greek mythology, where Eros was the god of love, desire, and attraction.In classical literature, Eros personified passionate love and was often depicted as a powerful force that could bind people together, leading them to experience deep emotional and physical connections. In philosophical discourse, particularly in the works of Plato, Eros transcends mere physical desire, encompassing a more profound longing for beauty, truth, and spiritual connection. Plato's 'Symposium' explores Eros as a driving force that inspires individuals to seek the divine and the eternal.

offer personalized advice to improve (human) relationships. AI-driven VR technologies, such as 'vTime XR', advertise date night experiences for long-distance couples, promising to help maintain intimacy despite physical separation. And intimacy enhancement apps like 'Pillow Talk' use AI to suggest conversation starters and activities based on interaction patterns, aiming to deepen partner connections (Sahota, 2024). As Nyholm et al. (2022, p. 235) write:

> "Most relationships have their ups and downs. But some relationships have too many downs and not enough ups. And some people have trouble establishing romantic relationships in the first place. Given that this is so, we should explore the technological future of love, not only with a critical and skeptical eye, but also with an eye to how we might relieve or avoid some of the worst (or most unnecessary or invaluable) sources of frustration and suffering in this domain."

AI tools have the potential to help, but only if the social value of fostering deep, meaningful connections is prioritized over market values of profit. AI matchmaking can aid in matching individuals based on shared values and long-term compatibility rather than superficial traits. For instance, advanced algorithms can analyze personality traits, life goals, and communication styles to facilitate more meaningful matches – provided that the privacy of this data is maintained. Similarly, romantic AI chatbots can serve as intermediaries, helping users explore their desires and relationship goals without the pressures of immediate commitment. These chatbots can provide companionship and emotional support for those who are lonely or going through a difficult time, offering a safe space to express feelings and build confidence. They can also help individuals practice social interactions and develop better communication skills, which are essential for successful relationships.

To realize these benefits, the development and use of such tools must be guided by a commitment to enhancing human connection and well-being, rather than solely driving profits. This shift in values can help ensure that technology serves to deepen our romantic relationships instead of further commodifying them. Of course, achieving this is challenging, given the enormous power that big tech companies already wield. However, it is important not to succumb to resignation. Instead, we should develop positive utopias for the future that we want to strive for and realize. As philosopher Richard David Precht (2018, p. 15) points out: "The future does not *come* [...] the future is *made* by us! The question is not: How *will* we live? But rather: How do we *want* to live?"

Conclusion

Over the past 200 years, romantic relationships have undergone significant transformations. Traditional social structures like family and community, which once provided stability and meaning, have diminished in importance as individuals have gained greater autonomy in choosing careers, places to live, and romantic partners. The rise of hedonism, women's emancipation, and the sexual revolution have reshaped the foundations of romance, partnership, and marriage. What was once primarily an economic, dynastic, and reproductive arrangement governed by religious norms has evolved into a personal contract between two people, grounded in emotional connection and mutual fulfillment. Simultaneously, ritualized courtship has faded away, replaced by a competitive dating market shaped by (neo-)liberal ideals and increasingly ambiguous social scripts. The separation of sexuality from religion, cosmology, and kinship has fundamentally altered perceptions of marriage, which was once seen as the sacred union of two bodies and souls. Now, the emphasis has shifted to viewing the sexual body as an independent entity. And while this shift has freed sexuality from the constraints of sin, it has also opened the door for its commodification, as seen in its exploitation through advertising and the beauty industry.

The decline of grand narratives rooted in religion, kinship, and political ideology has transformed our understanding of the meaning of life, positioning love as the central pursuit of happiness, stability, and purpose in Western societies. Traditionally, these qualities were derived from religion, family, and community ties, but in modern times, this role has increasingly shifted to romantic relationships, career achievement, and friendships. Friendships resonate with contemporary values of freedom and independence, as they can thrive across long distances with minimal physical interaction. Similarly, career achievements align with these values by allowing individuals to define their success on their own terms, often without the need for deep, ongoing interpersonal commitments. In contrast, romantic relationships demand physical closeness, shared responsibilities, and often the creation of a family, requiring a willingness to sacrifice personal freedoms. As a result, romance, as a more traditional element of life, can feel at odds with the modern quest for autonomy, making it especially vulnerable to the centrifugal forces of contemporary society.

Against this background, modern romance navigates a landscape of contradictions: we yearn for stability and security while simultaneously craving variety, freedom, and autonomy. The shift toward individualism and emotional fulfillment in our relationships, coupled with the expanded pool of potential partners due to rural-urban migration and the loosening of sexual norms, has created a new level of freedom but also heightened uncertainty. This complicates traditional notions of marital commitment and love, which now face constant threats from seemingly better alternatives. As a result, romantic disappointment, disillusionment, and painful breakups are increasingly common, leading some to explore alternatives like consensual non-monogamy and sologamy, while others withdraw from the emotional vulnerability that love entails. Casual sex, once seen as a symbol of sexual liberation, has often become a means of avoiding emotional commitment. The danger in this trend is the potential loss of the 'Other' as a meaningful presence that can provide a stable source of acceptance, appreciation, and stability, while also lifting us out of the narcissistic spiral of neoliberal self-optimization.

However, this text does not advocate for a return to premodern ideals of romantic relationships. While those times may have offered more stability and commitment, they also trapped individuals in toxic dynamics, subjugated women to their husbands, neglected women's sexual fulfillment, and upheld patriarchal structures in various forms. Only those with a misogynistic perspective or a lack of historical understanding would desire a return to such times. Likewise, this text is not a critique of individuals who find fulfillment in casual sex, friends-with-benefits arrangements, or consensual non-monogamous relationships. The freedom to love how and whom we choose is a priceless aspect of our democratic liberal societies – a freedom that, despite its challenges, must be fiercely protected.

Instead, this text underscores that freedom itself brings unique challenges, particularly when it becomes intertwined with market forces that offer solutions while also introducing its own set of drawbacks. One of these drawbacks is what sociologist Anthony Giddens (1991, 2000) describes as 'ontological insecurity', arising from the increasingly ambiguous social scripts surrounding love and relationships. In the absence of strong alternative narratives, our sexual capital takes on heightened significance in shaping our identities, making rejection, performance pressure, and loneliness pervasive experiences that deeply affect our sense of self-worth. To navigate these negative emotions, we are compelled to develop coping mechanisms to preserve our self-worth, which necessitates ongoing investment in our sexual capital, resilience, and adaptability. In response to these challenges, the market offers a variety of solutions. Beyond the beauty and cosmetics industry, relationship maintenance has evolved into a substantial market sector, encompassing industries like couple therapy, relationship coaching, and intimacy workshops. From therapeutic and pharmacological services to the expanding sex toy and pornography markets, there is an abundance of tools designed to enhance sexual performance, manage insecurity, and build resilience in a world where uncertainty is ever-present.

Artificial intelligence, as a new tool, is no exception. In our increasingly digital world, dating apps have surged in popularity due to their convenience and accessibility, becoming the primary way many people meet potential partners. Ever-improving algorithms promise to revolutionize the dating landscape by offering more accurate compatibility predictions, a safer dating environment and reduced risk of rejection through carefully curated matches. However, many users find the online dating experience frustrating and overwhelming, leading to dissatisfaction and even burnout. This is largely because dating apps are designed to maximize user engagement and keep users hooked – not help them find meaningful connections. As these platforms profit from the culture of non-commitment that continues to grow their user base, it is fair to question their true effectiveness in helping users find lasting relationships. In addition, the concept of AI companions is increasingly becoming a reality, with AI systems designed to emulate human connection, intimacy, and eroticism. AI companions like Replika have gained popularity by offering emotional support and companionship, with some users forming deep connections that help them navigate the complexities of modern romance. These AI companions provide a safe space for learning healthy emotional communication, alleviating loneliness, and addressing trauma. However, there are concerns about the authenticity of these relationships and the potential for AI to reinforce negative behaviors, as seen in cases where chatbots have encouraged harmful actions. Moreover, the ease of bonding with an artificial

companion that requires no care or effort may risk undermining our willingness to invest in and nurture human relationships.

As we increasingly turn to technological solutions to navigate the complexities of modern romance, we find ourselves facing new forms of dependency and subjugation. The use of AI matchmaking and AI companions, while offering convenience and expanded opportunities, also involves the collection, analysis, and monetization of the data we share, threatening the very freedom we have fought so hard to attain. This new form of commodification extends beyond the beauty industry and romantic encounters, reaching into the behavioral patterns of individuals themselves. By sharing our personal data, we open the door to a future of surveillance capitalism, where this information can be exploited to manipulate our choices, expose our vulnerabilities, or coerce us into actions we might not otherwise take. Thus, the convenience of these technological tools comes at the cost of our privacy and autonomy, as the very systems designed to enhance our romantic lives could ultimately diminish our freedom.

Despite these dangers, AI tools have the potential to enhance romantic relationships by fostering deeper connections and providing meaningful emotional support. Realizing this potential, however, requires a commitment to prioritizing human connection and privacy over profit. Surveillance capitalism can only be prevented through strong political intervention. Existing EU regulations – such as the General Data Protection Regulation (GDPR), the Digital Services Act (DSA), the Digital Markets Act (DMA), and the recently passed AI Act – are positive steps in the right direction. However, for these regulations to have a meaningful impact, they need to be applied beyond the European Union.

Ultimately, the political regulations we enact are in defense of our hard-won freedom – a freedom that can be overwhelming, leaving us isolated and forcing us to find our own meaning in life. It is a freedom that doesn't shield us from the pain of rejections, breakups, and responsibility, that makes us constantly question whether we could have made better choices, and that demands we be both emotionally resilient and vulnerable. Yet, it is precisely this freedom that we must embrace. The alternative is submission and subjugation to Big Tech – the modern-day grand inquisitors – who promise to alleviate the burden of freedom at the cost of our autonomy. As Immanuel Kant famously articulated in his 1784 essay, "Enlightenment is man's exit from his self-inflicted immaturity". True freedom, therefore, requires each of us to become mature individuals, capable of confronting the challenges of modern life, including those posed by contemporary romance. By recognizing and understanding the history and intricacies of these challenges, we can work toward a future where technology not only helps us navigate them but also enhances our ability to cultivate deep, fulfilling relationships, rather than undermining them.

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